

CMT-EX1

SERVICE MANUAL

Ver 1.1 2001.05

*US Model
Canadian Model
AEP Model
UK Model
E Model
Australian Model
Tourist Model*

- CMT-EX1 is composed of following models.
As for the service manual, it is issued for each component model, then, please refer to it.

COMPONENT MODEL NAME FOR CMT-EX1

COMPACT DISC DECK RECEIVER SYSTEM	HCD-EX1
SPEAKER SYSTEM	SS-CEX1

•Abbreviation

CND: Canadian model	AR : Argentine model
MY : Malaysia model	AUS: Australian model
SP : Singapore model	JE : Tourist model
HK : Hong Kong model	KR : Korea model

SPECIFICATIONS

General

Power requirements

North American model:	120 V AC, 60 Hz
European model:	230 V AC, 50/60 Hz
Other models:	110 - 240 V AC, 50/60 Hz

Power consumption 40W

Supplied accessories

Remote Commander (1)

Batteries (2)

AM loop antenna (1)

FM wire antenna (1)

Speaker cords (2)

Speaker legs (4)

Design and specifications are subject to change without notice.

PARTS LIST

Ref. No.	Part No.	Description	Remark
		ACCESSORIES & PACKING MATERIALS	

	1-418-614-11	COMMANDER, STANDARD (RM-SCEX1)	
	1-754-121-11	ANTENNA, LOOP	
	1-754-112-11	ANTENNA (FM) (EXCEPT US,CND)	
	1-754-113-11	ANTENNA (FM) (US,CND)	
	1-792-139-11	CORD, SPEAKER (1m)	
	3-867-450-11	MANUAL, INSTRUCTION (ENGLISH)	
	3-867-450-21	MANUAL, INSTRUCTION (FRENCH) (US,CND)	
	3-867-450-31	MANUAL, INSTRUCTION (FRENCH,SPANISH)	
		(AEP,E,MY,SP,AR)	
	3-867-450-41	MANUAL, INSTRUCTION (GERMAN,DUTCH, PORTUGUESE,ITALIAN) (AEP)	
	3-867-450-51	MANUAL, INSTRUCTION (DANISH,FINNISH, SWEDISH) (AEP)	
	3-867-450-61	MANUAL, INSTRUCTION (CHINESE) (SP,MY,HK)	
	4-993-348-01	COVER, BATTERY (FOR RM-SCEX1)	
	4-225-981-01	FOOT A (FOR SS-CEX1)	

COMPACT COMPONENT SYSTEM

SONY®

9-929-015-12
2001E0200-1
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Sony Corporation
Personal Audio Company
Shinagawa Tec Service Manual Production Group

REVISION HISTORY

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Also, clicking the version at the upper right on the revised page allows you to jump to the next revised page.

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HCD-EX1

SERVICE MANUAL



HCD-EX1 is the amplifier, CD and tuner section in CMT-EX1.

*US Model
Canadian Model
AEP Model
UK Model
E Model
Australian Model
Tourist Model*

Model Name Using Similar Mechanism	NEW
Mechanism Type	CDM-60
Base Unit Type	KSM-770ACA/S-NP
Optical Pick-up Type	KSS-770A/S-N1

SPECIFICATIONS

Amplifier section

For the U.S. model

AUDIO POWER SPECIFICATIONS

POWER OUTPUT AND TOTAL HARMONIC DISTORTION:

With 4 ohm loads both channels driven, from 70 – 20,000 Hz; rated 10 watts per channel minimum RMS power, with no more than 0.9% total harmonic distortion from 250 milliwatts to rated output.

Canadian model:

Continuous RMS power output (Reference)
15 + 15 watts
(4 ohms at 1 kHz, 10% THD)

European model:

DIN power output (Rated)
12 + 12 watts
(4 ohms at 1 kHz, DIN)

Continuous RMS power output (Reference)
15 + 15 watts
(4 ohms at 1 kHz, 10% THD)

Music power output (Reference)
15 + 15 watts

Other models:

DIN power output (Rated)
12 + 12 watts
(4 ohms at 1 kHz, DIN, 240 V)
12 + 12 watts
(4 ohms at 1 kHz, DIN, 220 V)
Continuous RMS power output (Reference)
15 + 15 watts
(4 ohms at 1 kHz, 10% THD, 240 V)
15 + 15 watts
(4 ohms at 1 kHz, 10% THD, 220 V)

Inputs
TAPE IN: voltage 250 mV, impedance 47 kilohms

Outputs
TAPE OUT: voltage 250 mV, impedance 1 kilohms
CD OUT: Optical
PHONES (stereo mini jack): accepts headphones of 8 ohms or more

CD player section

System
Compact disc and digital audio system

Laser
Semiconductor laser ($\lambda=780$ nm)
Emission duration: continuous
Max. 44.6 μ W*
* This output is the value measured at a distance of 200 mm from the objective lens surface on the Optical Pick-up Block with 7 mm aperture.

Frequency response
20 Hz – 20,000 Hz

Tuner section

FM stereo, FM/AM superheterodyne tuner

FM tuner section

Tuning range
87.5 – 108.0 MHz
(50 kHz step)

Antenna
FM wire antenna
Antenna terminals
75 ohms unbalanced
Intermediate frequency
10.7 MHz

AM tuner section

Tuning range
European model: 531 – 1,602 kHz
(with the interval set at 9 kHz)
Other models: 531 – 1,602 kHz
(with the interval set at 9 kHz)
530 – 1,710 kHz
(with the interval set at 10 kHz)

Antenna
AM loop antenna
External antenna terminals

Intermediate frequency
450 kHz

General

Power requirements
North American model: 120 V AC, 60 Hz
European model: 230 V AC, 50/60 Hz
Other models: 110 – 240 V AC, 50/60 Hz
Power consumption
50 W
Dimensions
170 × 217 × 200 mm
(6 ³/₄ × 8 ⁵/₈ × 7 ⁷/₈ in)
(w/h/d, incl. projecting parts and controls)

Mass
Approx. 3.0 kg (6 lb 10 oz.)

Designs and specifications are subject to change without notice.

COMPACT COMPONENT SYSTEM



SONY®

Laser component in this product is capable of emitting radiation exceeding the limit for Class 1.

CLASS 1 LASER PRODUCT
LUOKAN 1 LASERLAITE
KLASS 1 LASERAPPARAT

This appliance is classified as a CLASS 1 LASER product. The CLASS 1 LASER PRODUCT MARKING is located on the rear exterior.

CAUTION : INVISIBLE LASER RADIATION WHEN OPEN AND INTERLOCKS DEFEATED. AVOID EXPOSURE TO BEAM.
ADVARSEL : USYNLIG LASERSTRÅLING VED ÅBNING NÅR SIKKERHEDSAFBRYDERE ER UDE AF FUNKTION. UNDGÅ UDSÆTTELSE FOR STRÅLING.
VORSICHT : UNSICHTBARE LASERSTRAHLUNG, WENN ABDECKUNG GEÖFFNET UND SICHERHEITSVERRIEGELUNG ÜBERBRÜCKT. NICHT DEM STRAHL AUSSETZEN.
VARO! : AVATTAESSA JA SUOJALUKITUS OHITETTAESSA OLET ALT-TIINA NÄKYMÄTTÖMÄLLE LASERSÄTEILYLLE, ÄLÄ KATSO SÄTEESEEN.
VARNING : OSYNLIG LASERSTRÅLING NÅR DENNA DEL ÄR ÖPPNAD OCH SPÄRREN ÄR URKOPPLAD, BETRÄKTA EJ STRÅLEN.
ADVERSEL : USYNLIG LASERSTRÅLING NÅR DEKSEL ÅPNES OG SIKKERHEDSLÅS BRYTES, UNNGÅ EKSPONERING FOR STRÅLEN.
VIGYAZAT! : A BURKOLAT NYITÁSAKOR LÁTHATATLAN LÉZERSUGÁRVESZÉLY! KERÜLJE A BESUGÁRZÁST!

This caution label is located inside the unit.

CAUTION

Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

Notes on chip component replacement

- Never reuse a disconnected chip component.
- Notice that the minus side of a tantalum capacitor may be damaged by heat.

Flexible Circuit Board Repairing

- Keep the temperature of soldering iron around 270°C during repairing.
- Do not touch the soldering iron on the same conductor of the circuit board (within 3 times).
- Be careful not to apply force on the conductor when soldering or unsoldering.

SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety checks before releasing the set to the customer: Check the antenna terminals, metal trim, “metallized” knobs, screws, and all other exposed metal parts for AC leakage. Check leakage as described below.

LEAKAGE

The AC leakage from any exposed metal part to earth Ground and from all exposed metal parts to any exposed metal part having a return to chassis, must not exceed 0.5 mA (500 microamperes). Leakage current can be measured by any one of three methods.

1. A commercial leakage tester, such as the Simpson 229 or RCA WT-540A. Follow the manufacturers’ instructions to use these instruments.
2. A battery-operated AC milliammeter. The Data Precision 245 digital multimeter is suitable for this job.
3. Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC voltmeter. The “limit” indication is 0.75 V, so analog meters must have an accurate low-voltage scale. The Simpson 250 and Sanwa SH-63Trd are examples of a passive VOM that is suitable. Nearly all battery operated digital multimeters that have a 2V AC range are suitable. (See Fig. A)

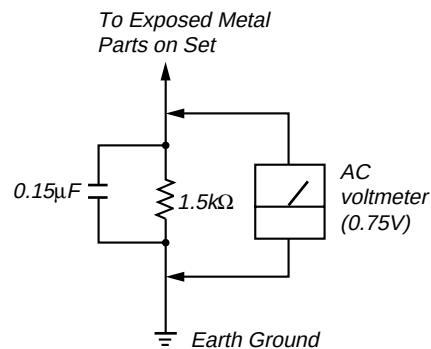


Fig. A. Using an AC voltmeter to check AC leakage.

SAFETY-RELATED COMPONENT WARNING !!

COMPONENTS IDENTIFIED BY MARK $\triangle$ OR DOTTED LINE WITH MARK $\triangle$ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!!

LES COMPOSANTS IDENTIFIÉS PAR UNE MARQUE $\triangle$ SUR LES DIAGRAMMES SCHÉMATIQUES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈCES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPLÉMENTS PUBLIÉS PAR SONY.

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NOTES ON HANDLING THE OPTICAL PICK-UP BLOCK OR BASE UNIT

The laser diode in the optical pick-up block may suffer electrostatic break-down because of the potential difference generated by the charged electrostatic load, etc. on clothing and the human body.

During repair, pay attention to electrostatic break-down and also use the procedure in the printed matter which is included in the repair parts.

The flexible board is easily damaged and should be handled with care.

NOTES ON LASER DIODE EMISSION CHECK

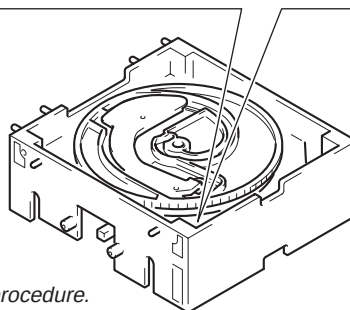
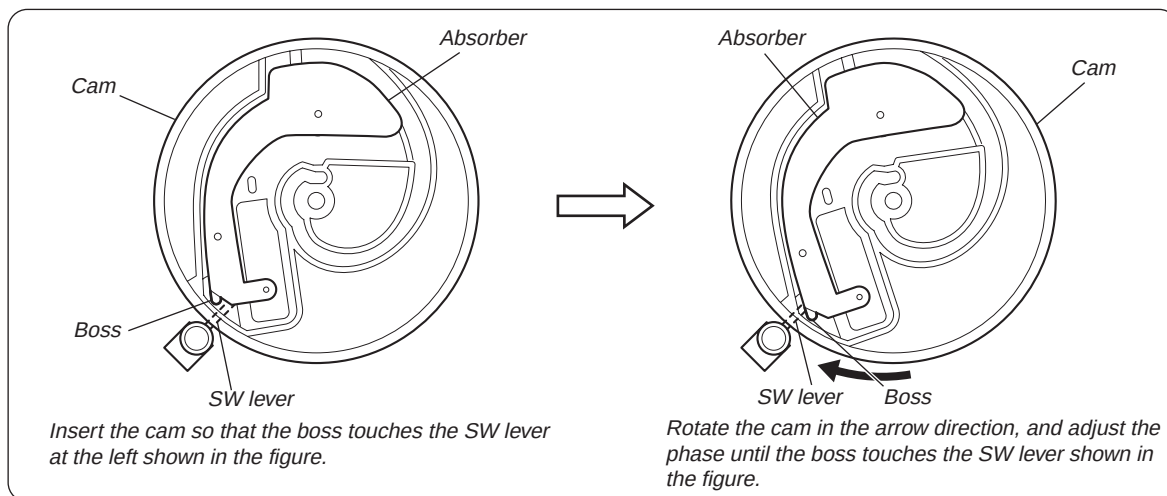
The laser beam on this model is concentrated so as to be focused on the disc reflective surface by the objective lens in the optical pick-up block. Therefore, when checking the laser diode emission, observe from more than 30 cm away from the objective lens.

LASER DIODE AND FOCUS SEARCH OPERATION CHECK

Carry out the “S curve check” in “CD section adjustment” and check that the S curve waveform is output four times.

SECTION 1 SERVICING NOTE

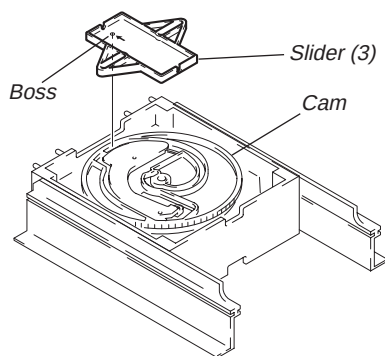
ADJUSTMENT OF CAM PHASE



With the phase adjusted, attach the parts using the following procedure.

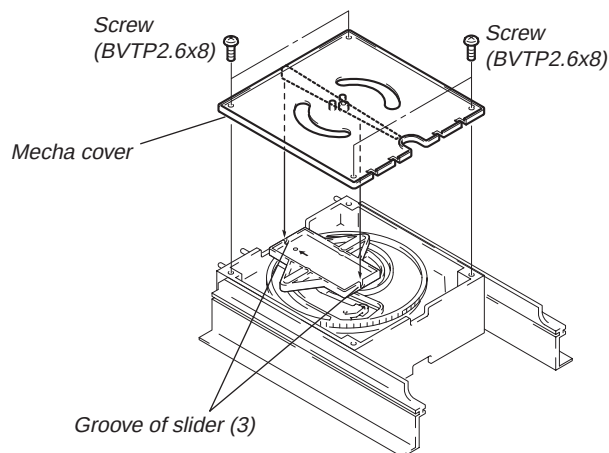
STEP1

Insert the boss of the slider (3) in the groove of the cam.



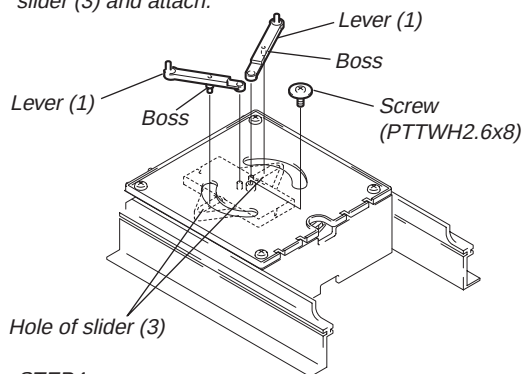
STEP2

Set the mecha cover to the groove on the slider (3) and attach.



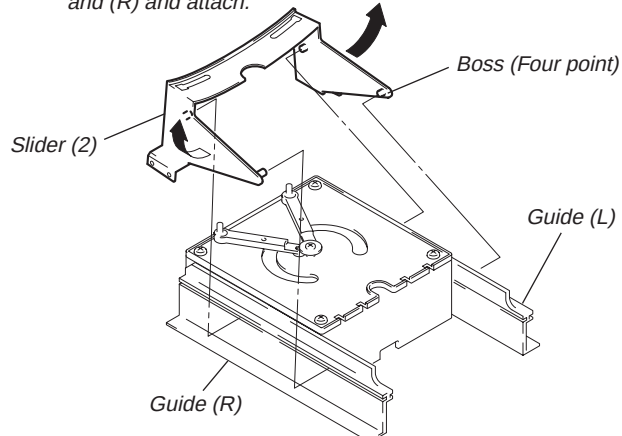
STEP3

Insert the boss of the lever (1) in the hole of the slider (3) and attach.



STEP4

While bending the slider (2) slightly in the arrow direction, insert it in the groove of the guides (L) and (R) and attach.



Shipment Mode

- Mode for setting the state of the unit to the state at shipment. When returning the unit to the customer after completing servicing, set to the shipment mode.

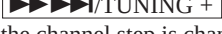
Procedure :

Connect the power plug to the outlet while pressing the  button.

Change-over of AM tuner Step between 9kHz and 10kHz.

- A step of AM channels can be changed over between 9kHz and 10kHz.

Procedure:

1. Press  button to turn on the set ON.
2. Select the function “TUNER”, and press the  button to select the BAND “AM”.
3. Press the  button to turn on the set OFF.
4. Press  button while pressing the  button, and the display of liquid crystal indicator tube changes to “AM 9k STEP” or “AM 10k STEP”, and thus the channel step is changed over.

Switching the TAPE IN input level attenuate function ON/OFF

- The attenuate function of the line input level (TAPE IN) of this unit can be turned ON/OFF.

Procedure:

1. Press the  button to turn ON the power.
2. Press the  button and set the function to “TAPE”.
3. Press the  button to turn OFF the power.
4. While pressing the  button, press the  button to turn ON the power.
5. After “POWER ON” is displayed, “ATT ON” and “ATT OFF” are displayed, and the attenuate function can be switched ON/OFF.

LCD All Lit and Key Check Mode

Procedure:

1. While pressing the  button and  button, connect the power plug to the outlet.
2. When the test mode is set, the characters “STEP” are displayed on the LCD.
3. While pressing the  button, press the  button. The whole LCD lights up.
4. Each time the  button is pressed, the display switches between all lit → partial lighting 1 → partial lighting 2 → all lit.
5. When the  button is pressed, “KEY 0” is displayed and the key check mode is set.
6. Each time the button is pressed, the counter counts up. Buttons once pressed will not be counted when pressed again.
When all buttons have been pressed, “KEY OK” is displayed.
7. To end, press the  button to turn OFF the power, and disconnect the power plug from the outlet.

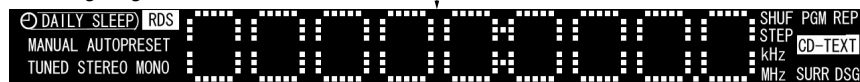
Note:

Pressing buttons other than those specified in steps 4 and 5 displays modes not used in servicing. In such cases, press the  button to exit the mode, and repeat from step 3 again.

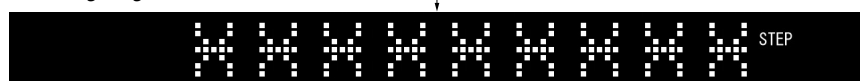
All lit



Partial lighting 1



Partial lighting 2



Displaying the CD Text

- This unit is equipped with a simple CD text display function.
The text is displayed only for the first 20 songs. As it will not be displayed from the 21st song, do not suspect a fault.
In some cases, special characters may not be displayed or may be substituted by other characters. This is not a fault.

Aging Mode

- The aging mode automatically repeats the operations of the CD.

When an error occurs:

Aging stops

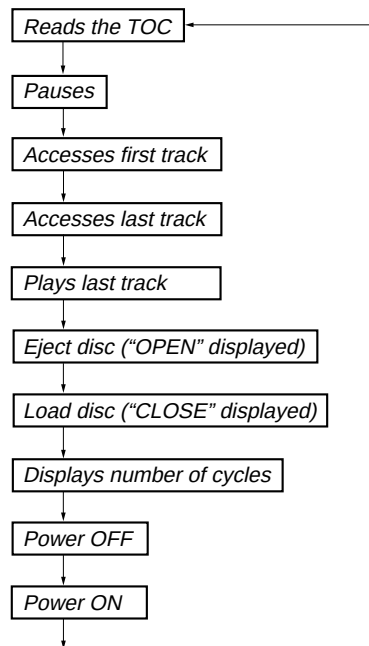
When no error occurs:

Aging is performed repeatedly.

Procedure:

1. Set any CD. (One with a short playback time of the final track is recommended.)
2. While pressing the **FUNCTION** button and **▶||** button, connect the power plug to the outlet.
3. When the test mode is set, the characters “STEP” is displayed on the LCD.
4. When the **▶||** button is pressed while pressing the **DISPLAY** button, “AGING” will be displayed, and aging is performed in the following sequence. While aging is performed, “REP” will be displayed blinking.
5. Pressing the **DISPLAY** button during aging displays the cycle number (@ CY where @ is the number of agings).
6. To end aging, press the **I/O** button, turn OFF the power, and disconnect the power plug from the outlet.

Sequence during aging



SECTION 2 GENERAL

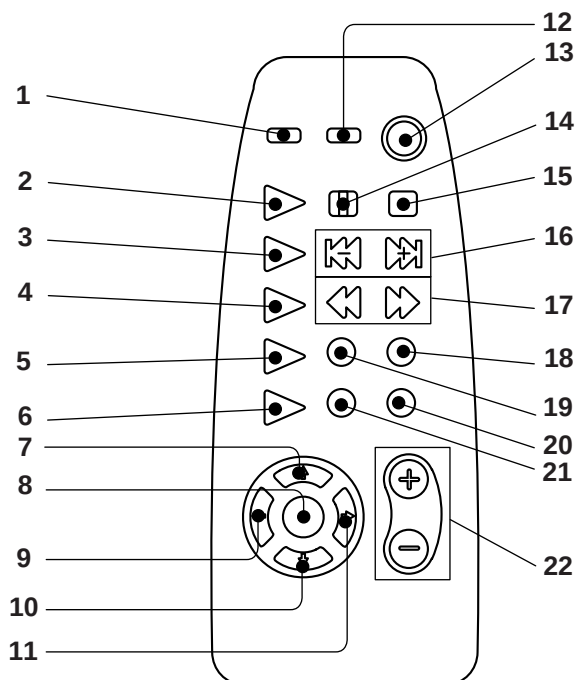
Front Panel



LOCATION OF PARTS AND CONTROLS

- 1 I/⏻ (power) button
- 2 DISC tray
- 3 Display window
- 4 ▲ button
- 5 VOLUME + button
- 6 VOLUME – button
- 7 ►►►►/TUNING + button
- 8 ◀◀◀◀/TUNING – button
- 9 ■ (stop) button
- 10 ►|| button
- 11 TUNER/BAND button
- 12 FUNCTION button
- 13 DISPLAY button

Remote



- 1 OPEN/CLOSE button
- 2 CD ► button
- 3 TUNER/BAND button
- 4 FUNCTION button
- 5 CD PLAY MODE button
- 6 TUNING MODE button
- 7 MEMORY button
- 8 ENTER button
- 9 TIMER SET button
- 10 SLEEP button
- 11 TIMER SELECT button
- 12 DISPLAY button
- 13 I/⏻ (power) button
- 14 ◻ button
- 15 ◻ button
- 16 ◀◀◀/▶▶▶ (AMS) TUNING +/- button
- 17 ◀◀/▶▶ button
- 18 REPEAT button
- 19 DSG button
- 20 SURROUND button
- 21 STEREO/MONO button
- 22 VOLUME +/- button

• AMS is the abbreviation for Automatic Music Sensor.

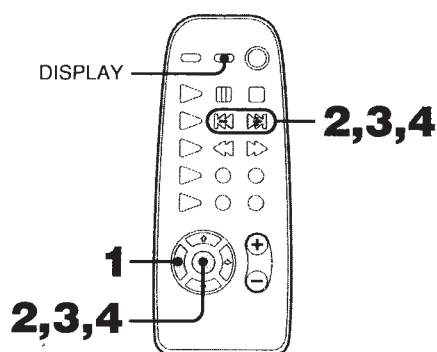
Step 2: Setting the time

You must set the time before you can use the timer functions.

The clock is on a 24-hour system for the European model, and a 12-hour system for other models.

The 24-hour system model is used for illustration purpose.

Set the time before turning the power on.



- 1 Press **TIMER SET** while the power is off.
The day indication flashes after “**CLOCK SET**” flashing.



- 2 Press **+/-** to set the day then press **ENTER**.
The hour indication flashes.



- 3 Press **+/-** to set the hour then press **ENTER**.

The minute indication flashes.



- 4 Press **+/-** to set the minute then press **ENTER**.

The clock starts.

To change the time

You can change the preset time while the power is on.

- 1 Press **TIMER SET**.
- 2 Press **+/-** repeatedly until “**CLOCK SET**” appears then press **ENTER**.
- 3 Repeat steps 2 to 4.

To show the time

You can display the clock any time.

Press **DISPLAY** repeatedly until the clock display appears.

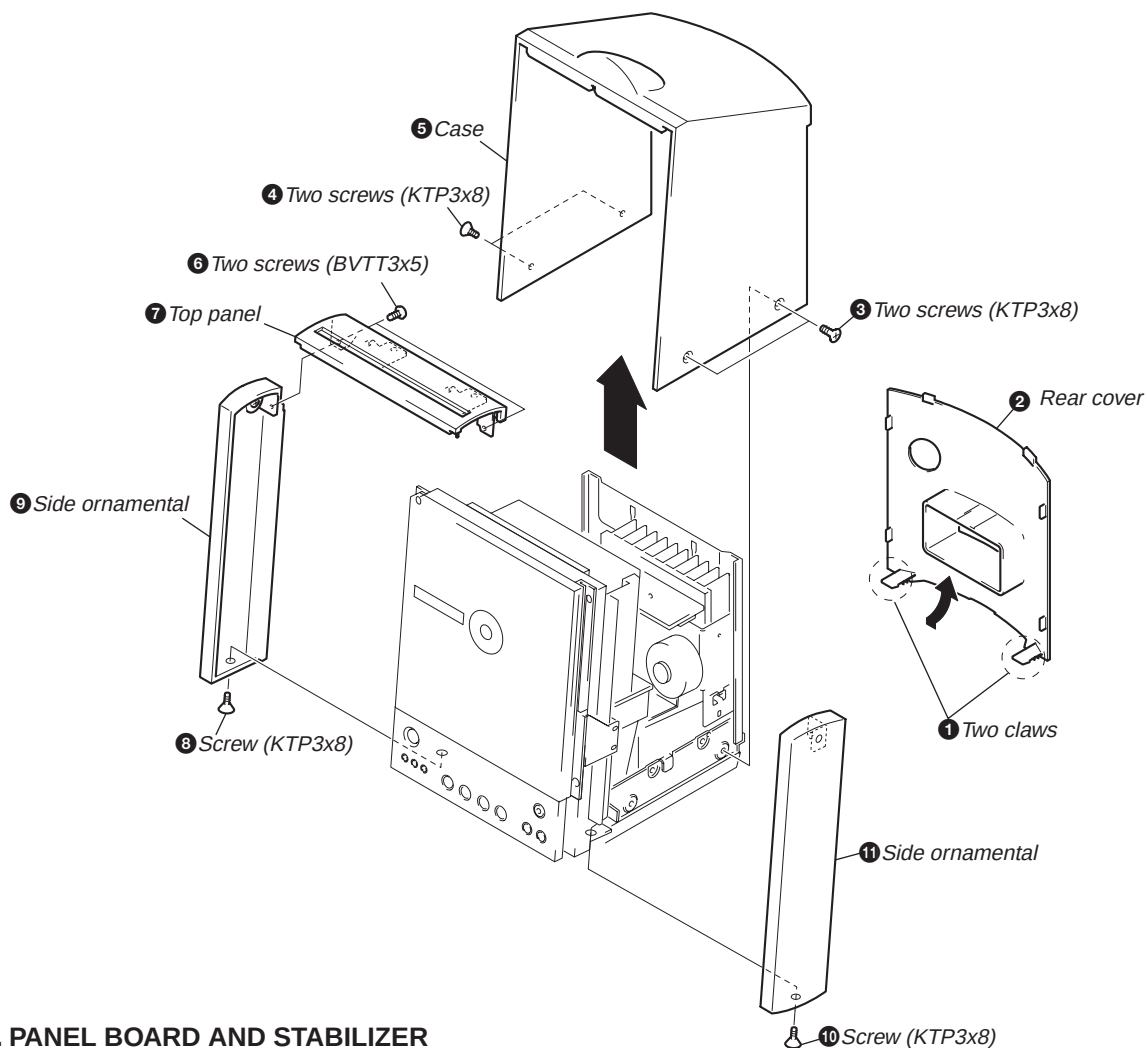
Tips

- If you have made a mistake, start over from step 1.
- The built-in clock shows the time in the display while the power is off.
- The upper dot flashes for the first half of a minute (0 to 29 seconds), and the lower dot flashes for the last half of a minute (30 to 59 seconds).

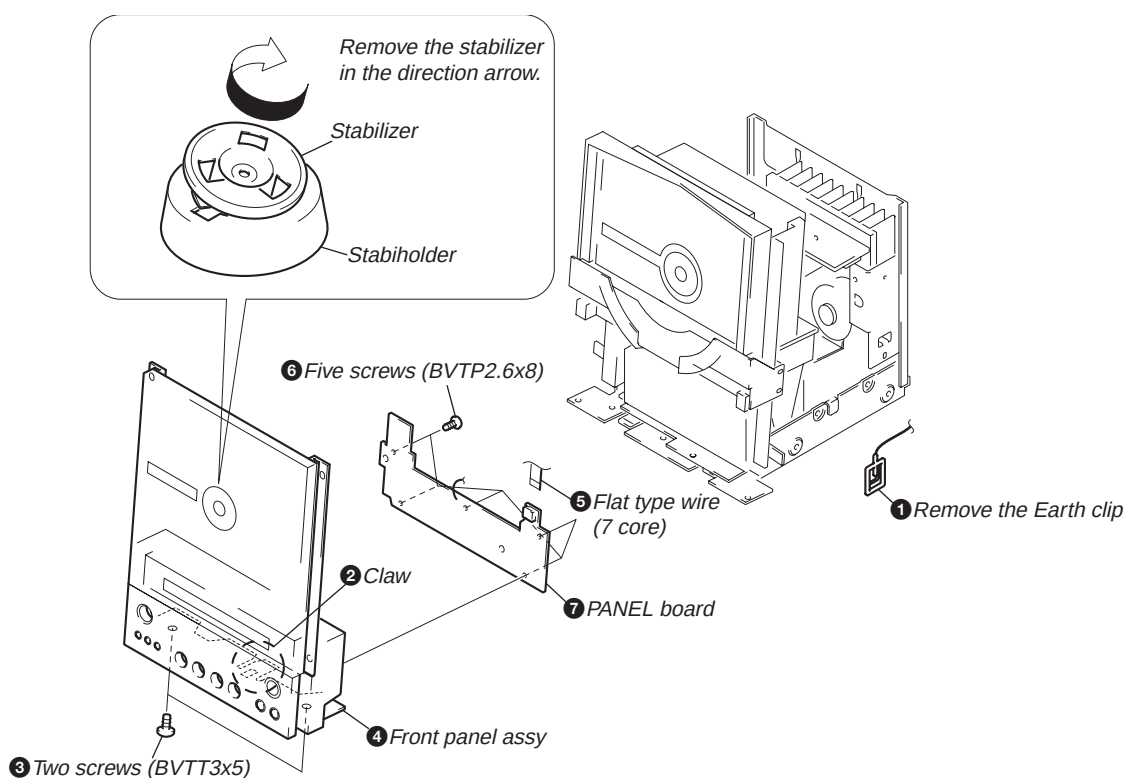
SECTION 3 DISASSEMBLY

Note: Follow the disassembly procedure in the numerical order given.

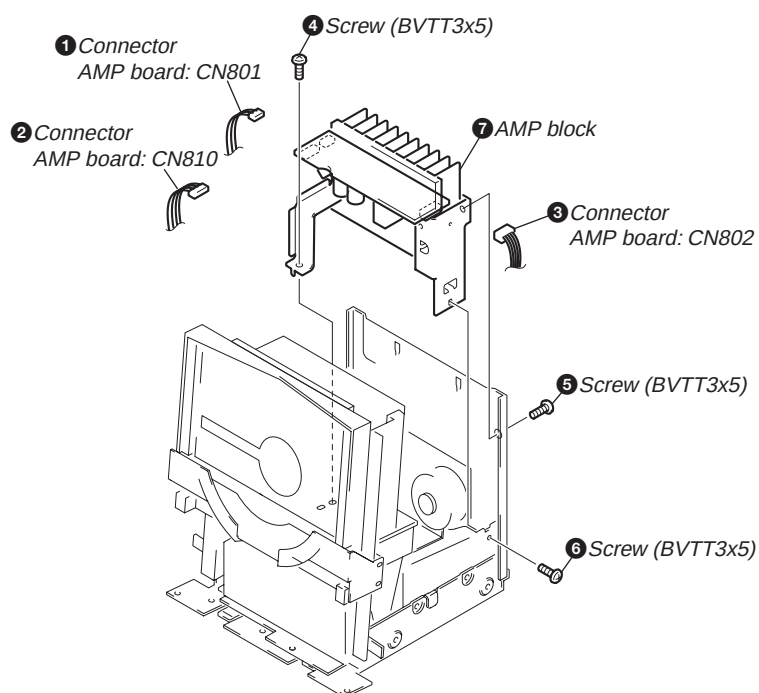
3-1. BACK COVER AND CASE



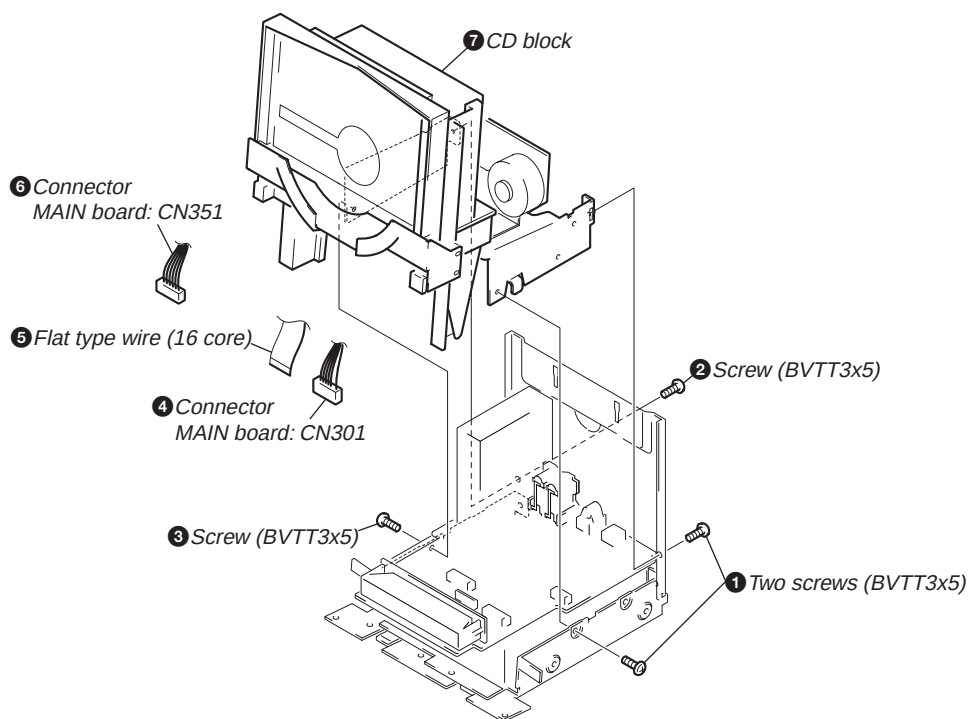
3-2. PANEL BOARD AND STABILIZER



3-3. AMP BLOCK

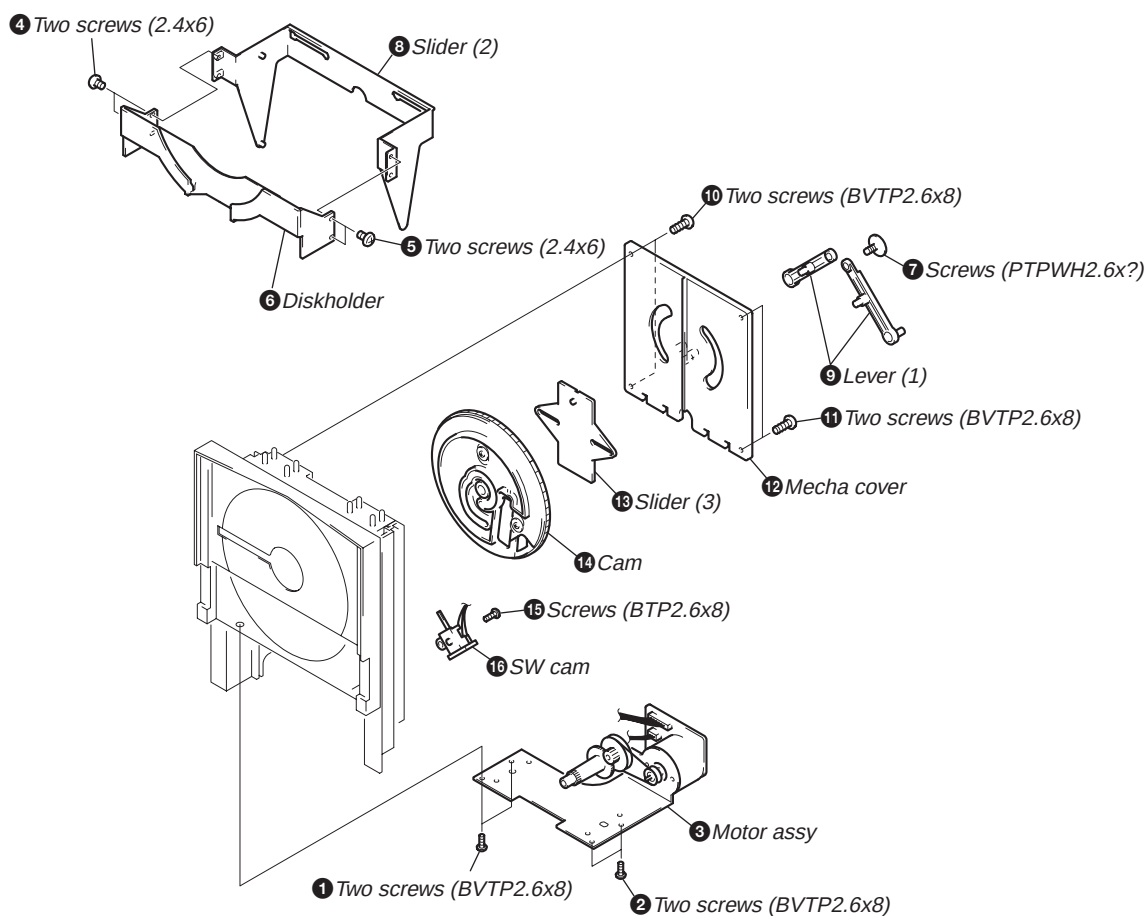


3-4. CD BLOCK

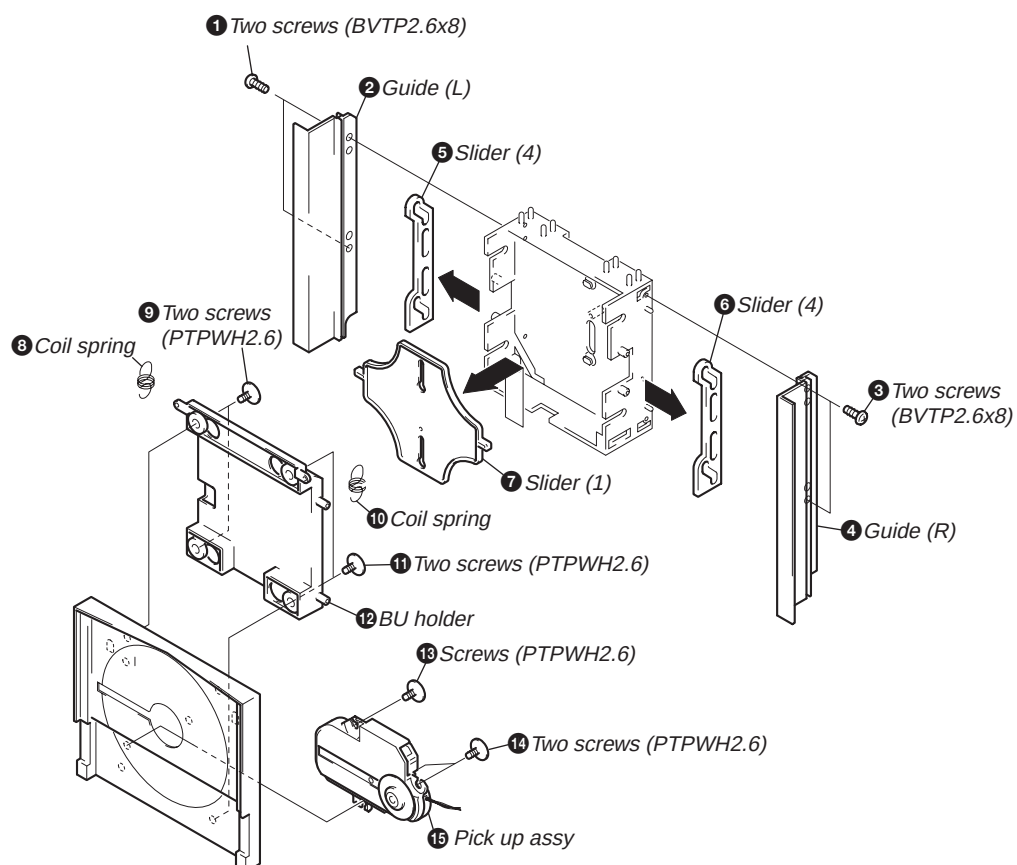


3-5. MOTOR ASSY AND CAM

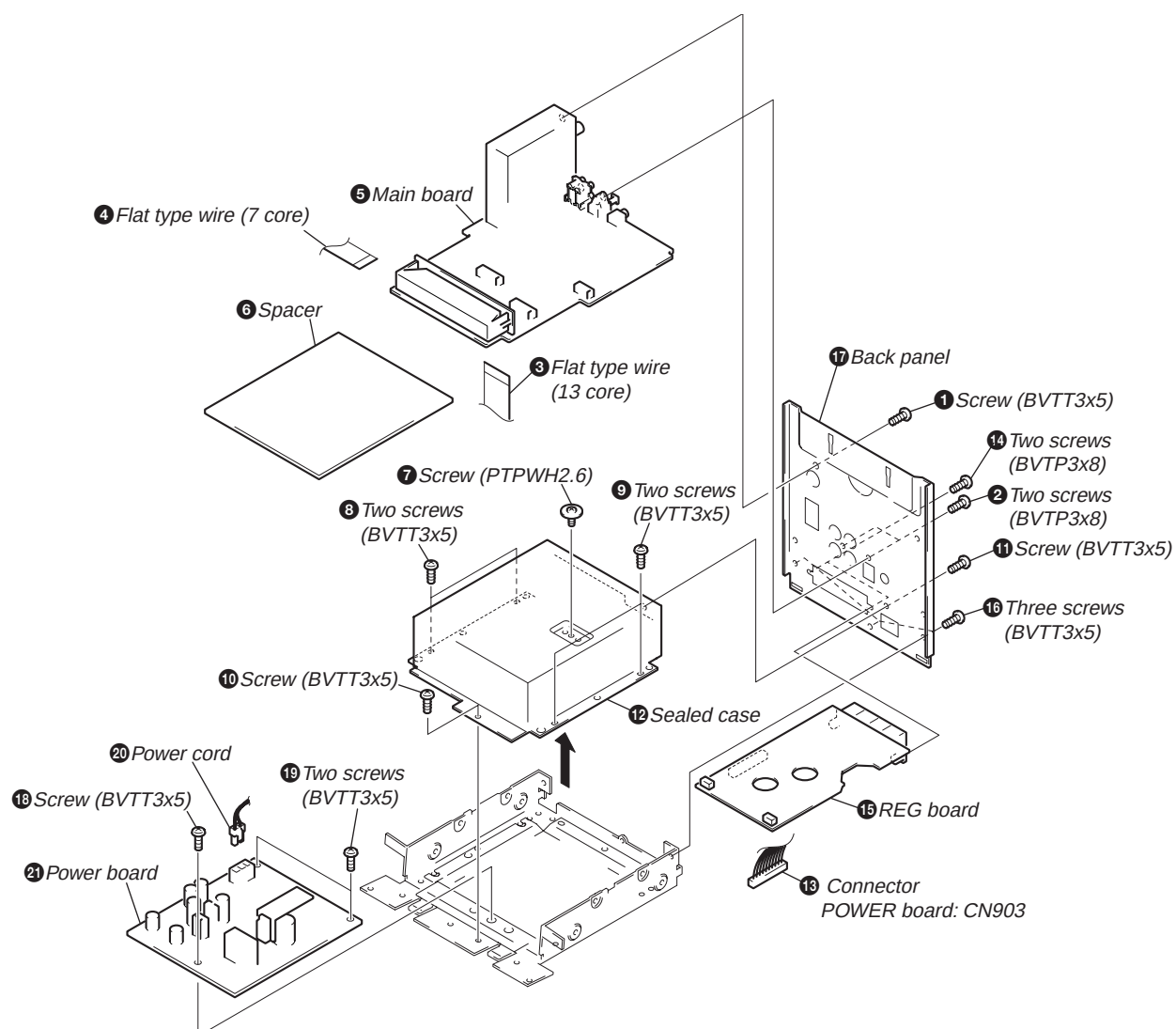
Note: Adjustment of the phase is required in assembly. Refer to "Section 1. Servicing Note" for details.



3-6. BASE UNIT



3-7. MAIN BOARD AND POWER BOARD

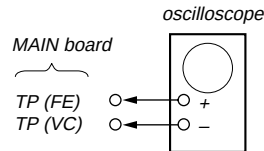


SECTION 4 ELECTRICAL ADJUSTMENT

Note:

1. CD Block is basically constructed to operate without adjustment. Therefore, check each item in order given.
2. Use YEDS-18 disc (3-702-101-01) unless otherwise indicated.
3. Use an oscilloscope with more than 10M Ω impedance.
4. Clean the object lens by an applicator with neutral detergent when the signal level is low than specified value with the following checks.

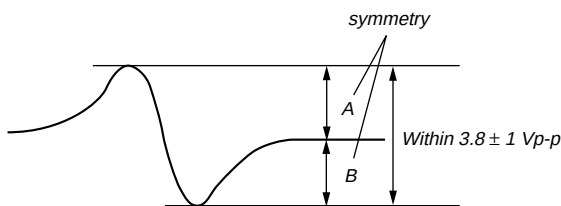
S Curve Check



Procedure :

1. Connect the oscilloscope to test points TP (FE) and TP (VC).
2. Connect TP (FEI) and TP (VC) of the MAIN board with lead wires.
3. Press the button to turn the set ON.
4. Press the button, load and eject the disc (YEDS-18) to perform focus search.
5. Check the symmetry and peak to peak level of the oscilloscope waveform (S curve) at this time.

S-curve waveform

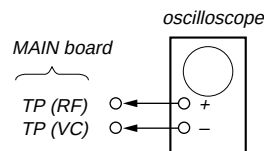


6. After check, remove the lead wire connected in step 2.

Note: • Try to measure several times to make sure than the ratio of A : B or B : A is more than 10 : 7.
• Take sweep time as long as possible and light up the brightness to obtain best waveform.

Checking Location : MAIN board

RF Level Check

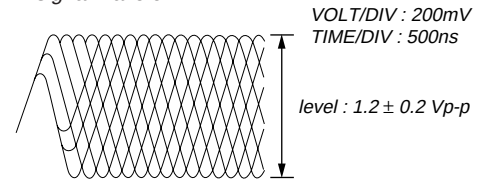


Procedure :

1. Connect oscilloscope to test point TP (RF) and TP (VC) on MAIN board.
2. Press the button to turn the set ON.
3. Put disc (YEDS-18) in and playback 5track.
4. Confirm that oscilloscope waveform is clear and check RF signal level is correct or not.

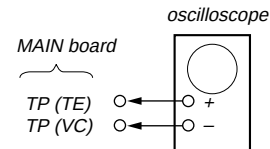
Note: Clear RF signal waveform means that the shape “ $\diamond$ ” can be clearly distinguished at the center of the waveform.

RF signal waveform



Checking Location : MAIN board

E-F Balance (1 Track Jump) check

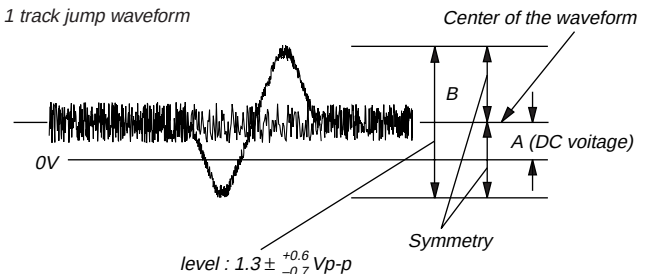


Procedure:

1. Connect oscilloscope to test point TP (TE) and TP (VC) on MAIN board.
2. Press the button to turn the unit ON.
3. Put disc (YEDS-18) in to play the number five track.
4. Press the button, to pause.
5. Check the level (B) of the oscilloscope's waveform and the DC voltage (A) of the center of the Traverse waveform.
Confirm the following:

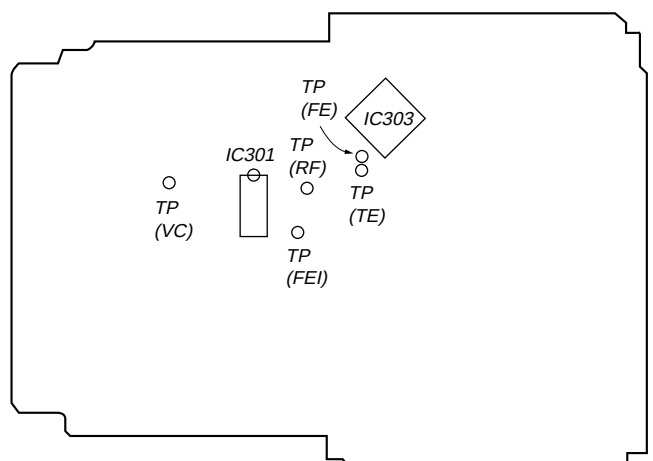
- $A/B \times 100 = \text{less than } \pm 22 (\%)$
- $B = 1.3 \pm \begin{smallmatrix} +0.6 \\ -0.7 \end{smallmatrix} \text{ Vp-p}$

1 track jump waveform



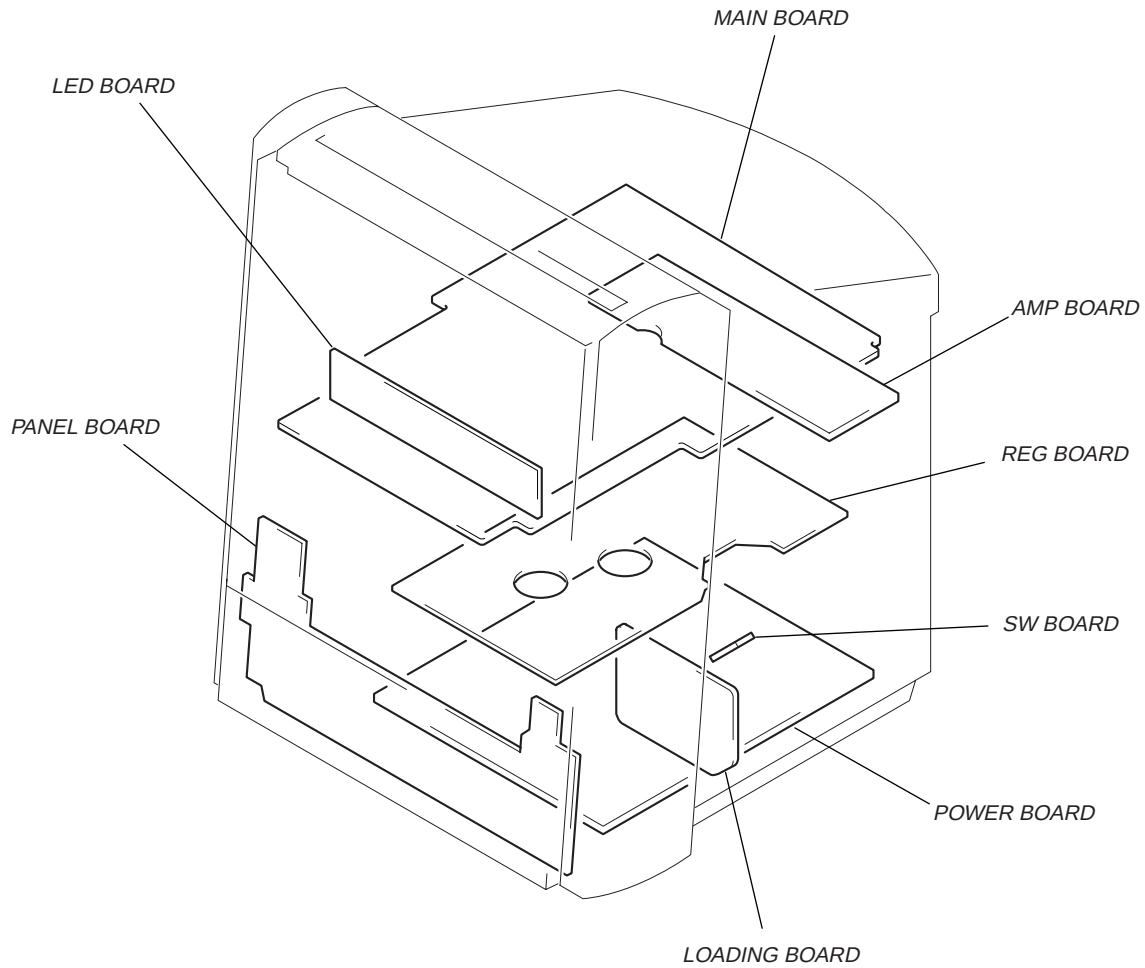
Checking Location : MAIN board

[MAIN BOARD] — SIDE A —



SECTION 5 DIAGRAMS

5-1. CIRCUIT BOARDS LOCATION



THIS NOTE IS COMMON FOR PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS.
(In addition to this, the necessary note is printed in each block.)

For schematic diagrams.

Note:

- All capacitors are in μF unless otherwise noted. pF: $\mu\mu\text{F}$ 50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and $\frac{1}{4}\text{W}$ or less unless otherwise specified.
- Δ : internal component.
-  : nonflammable resistor.
-  : fusible resistor.
-  : panel designation.

Note:

The components identified by mark Δ or dotted line with mark Δ are critical for safety.
Replace only with part number specified.

Note:

Les composants identifiés par une marque Δ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

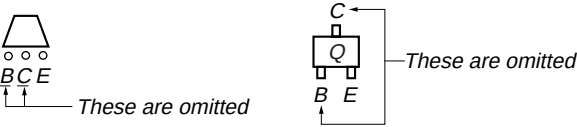
-  : B+ Line.
-  : B- Line.
-  : adjustment for repair.
- Voltages and waveforms are dc with respect to ground under no-signal (detuned) conditions.
- Voltages and waveforms are dc with respect to ground in service mode.
- Waveforms are taken with a oscilloscope.
Voltage variations may be noted due to normal production tolerances.
no mark : STOP
- Circled numbers refer to waveforms.
- Signal path.
 : CD
 : digital out
- Abbreviation
CND : Canadian model.

For printed wiring boards.

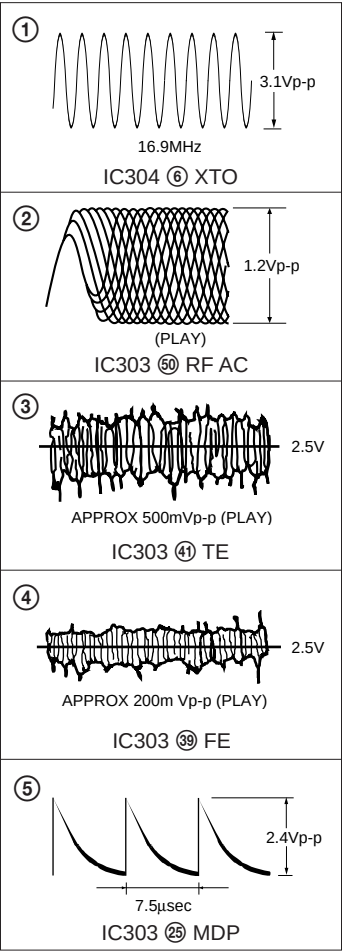
Note:

-  : parts extracted from the component side.
-  : Through hole.
-  : Pattern from the side which enables seeing.
(The other layers' patterns are not indicated.)

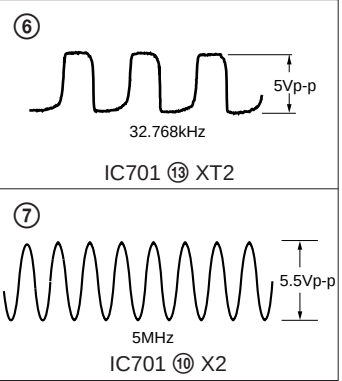
Indication of transistor



WAVEFORMS
– MAIN (1/3) SECTION –



– MAIN (3/3) SECTION –

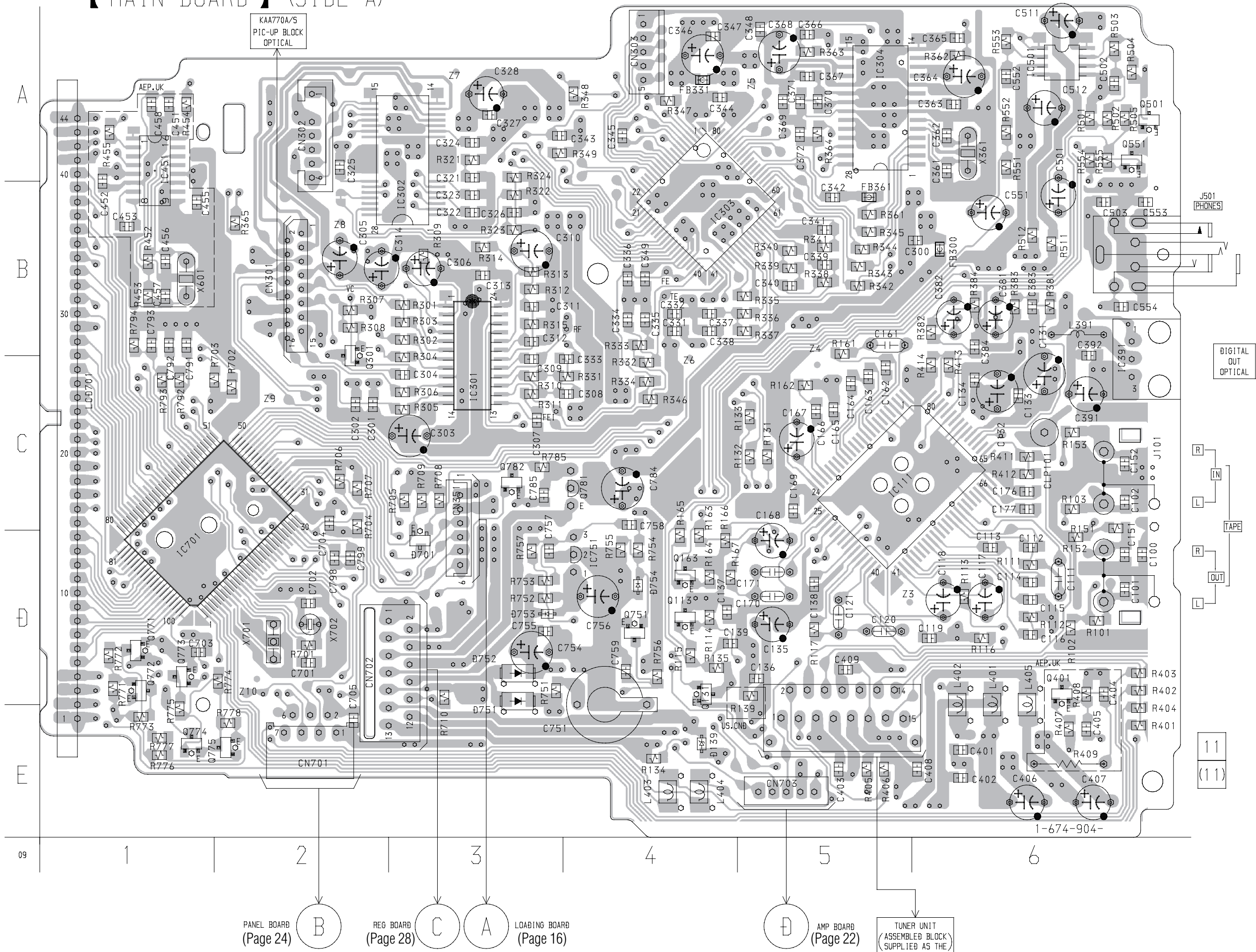


5-2. PRINTED WIRING BOARD – MAIN SECTION –
• See page 14 for Circuit Boards Location.

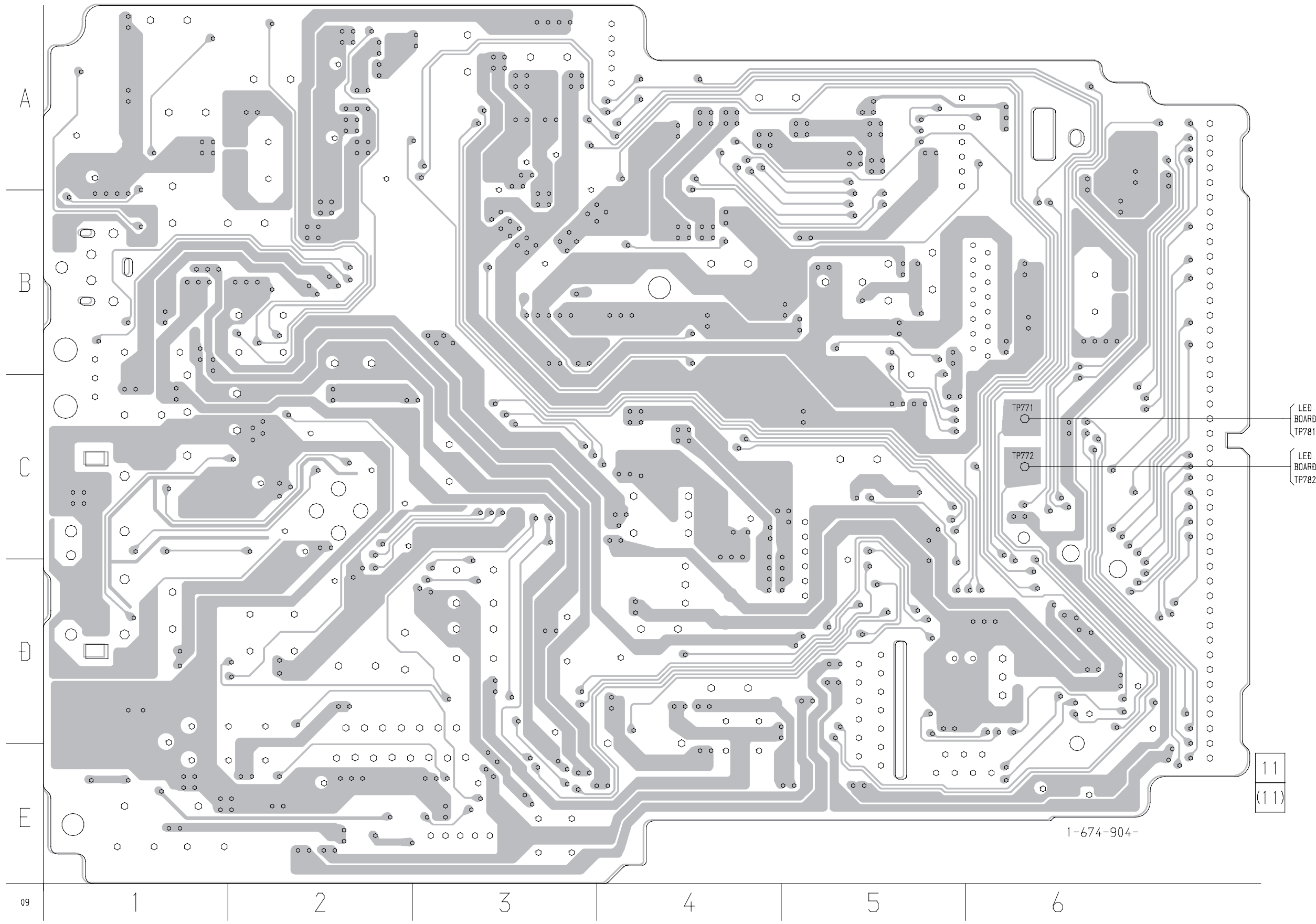
【 MAIN BOARD 】 (SIDE A)

• Semiconductor Location

Ref. No.	Location
D139	E-4
D701	D-3
D751	D-3
D752	D-3
D753	D-3
D754	D-4
IC111	C-5
IC301	C-3
IC302	B-3
IC303	B-4
IC304	A-5
IC391	B-6
IC451	A-1
IC501	A-6
IC701	D-1
IC751	C-4
Q113	D-4
Q131	D-4
Q163	D-4
Q301	C-2
Q401	D-6
Q751	D-4
Q771	D-1
Q772	D-1
Q781	C-4
Q782	C-3

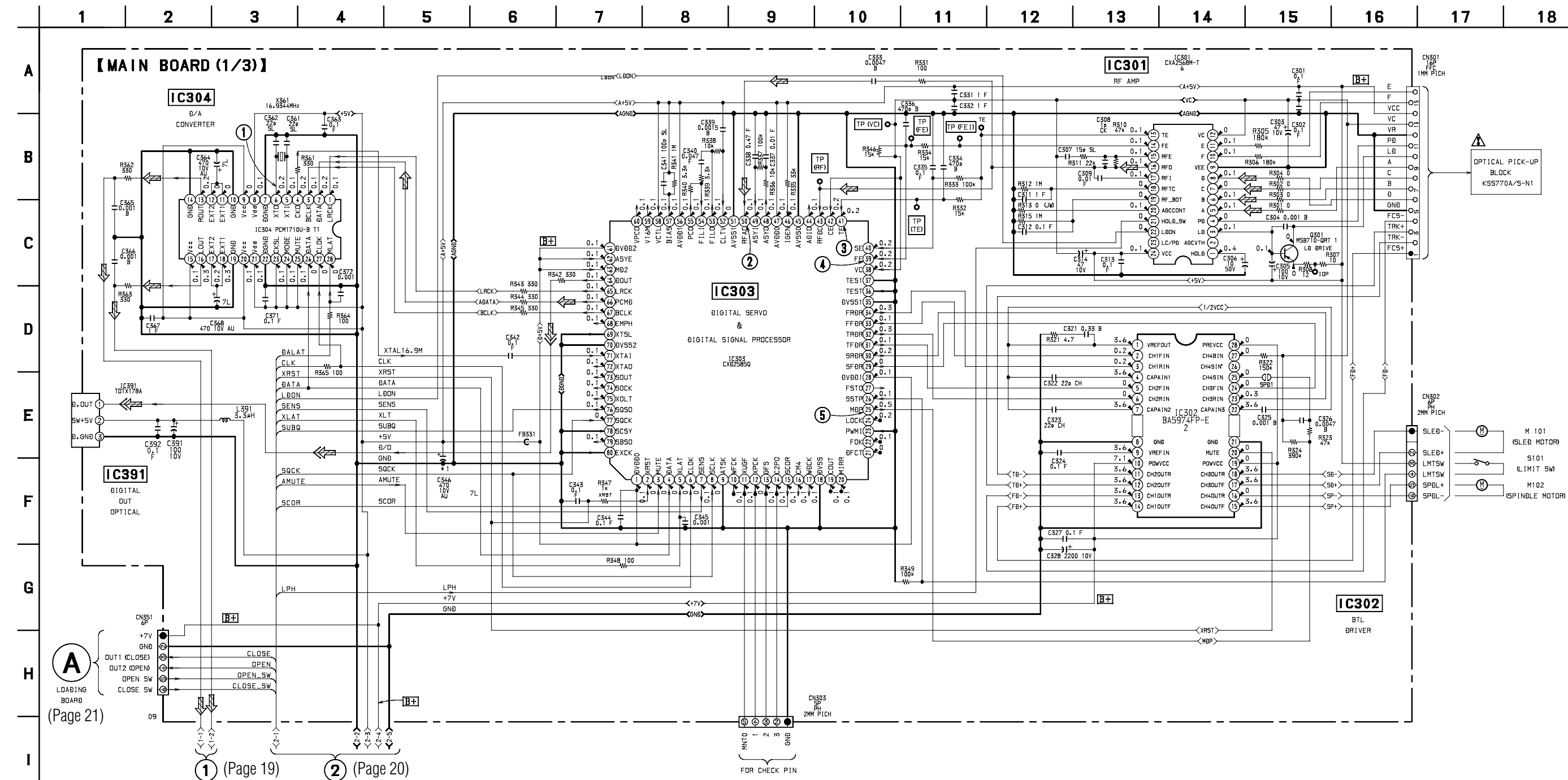


【MAIN BOARD】(SIDE B)



5-3. SCHEMATIC DIAGRAM – MAIN (1/3) SECTION –

- See page 15 for Waveforms.
- See page 16 for Printed Wiring Board.
- See page 30 for IC Block Diagrams.
- See page 32 for IC Pin Functions.



4
(Page 20)

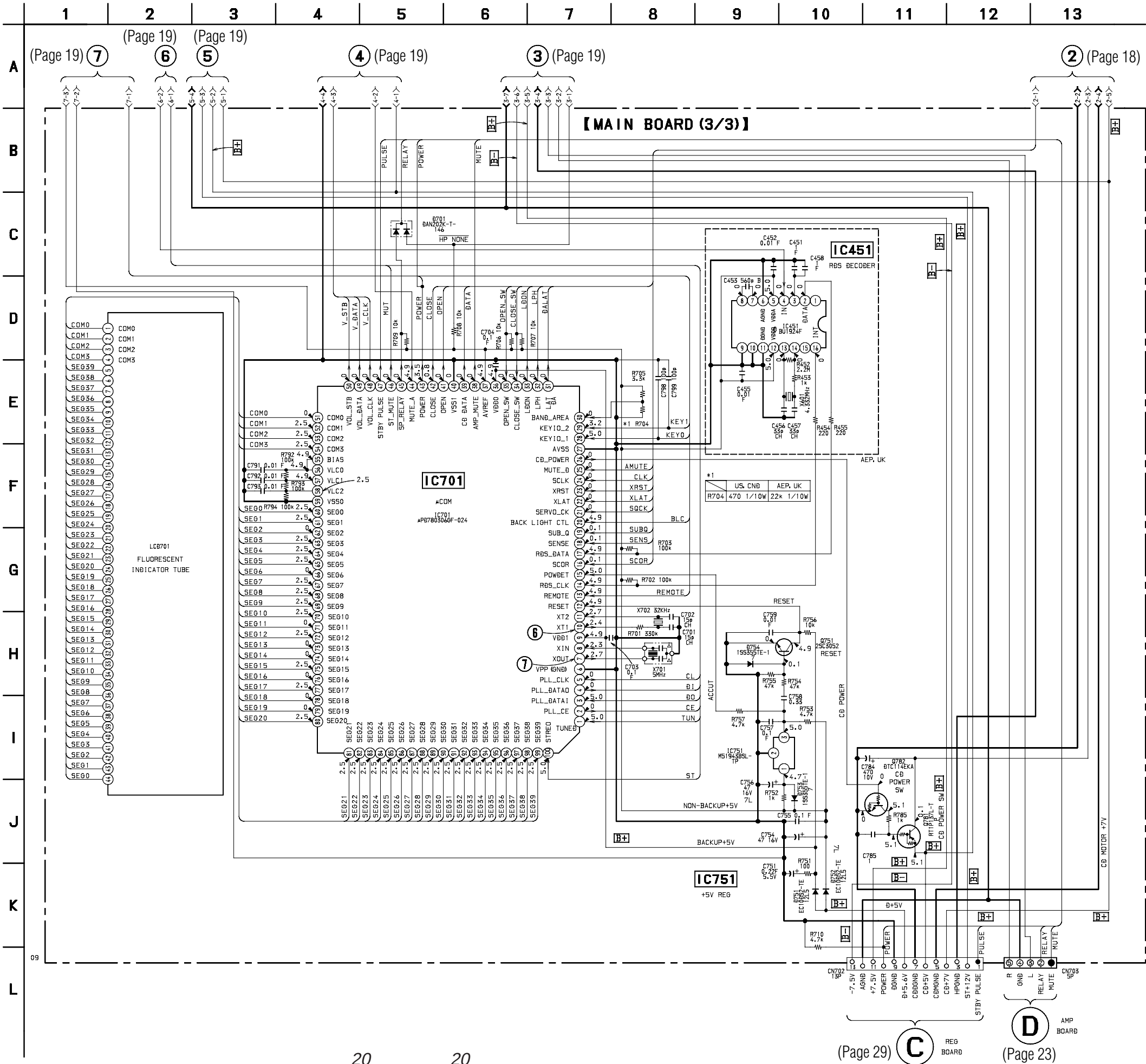
(Page 20)

⑤

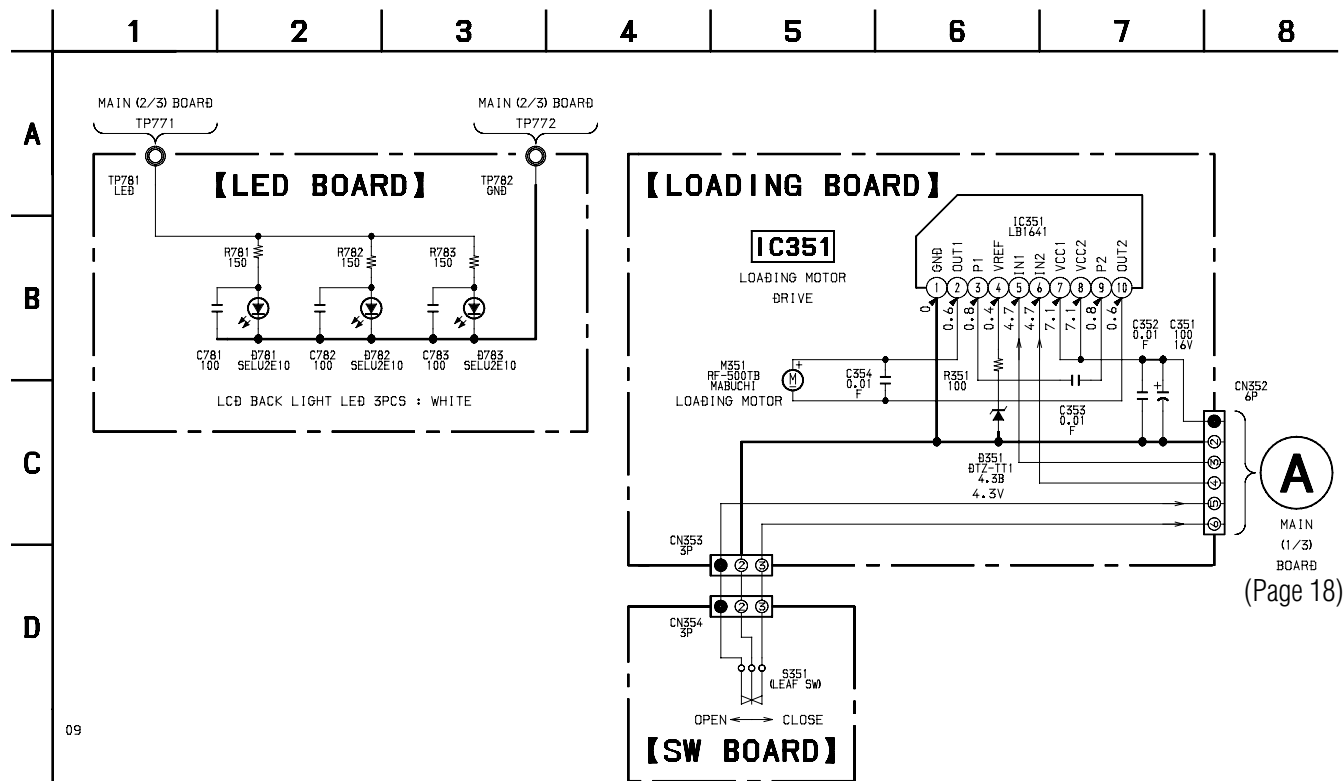


5-5. SCHEMATIC DIAGRAM – MAIN (3/3) SECTION –

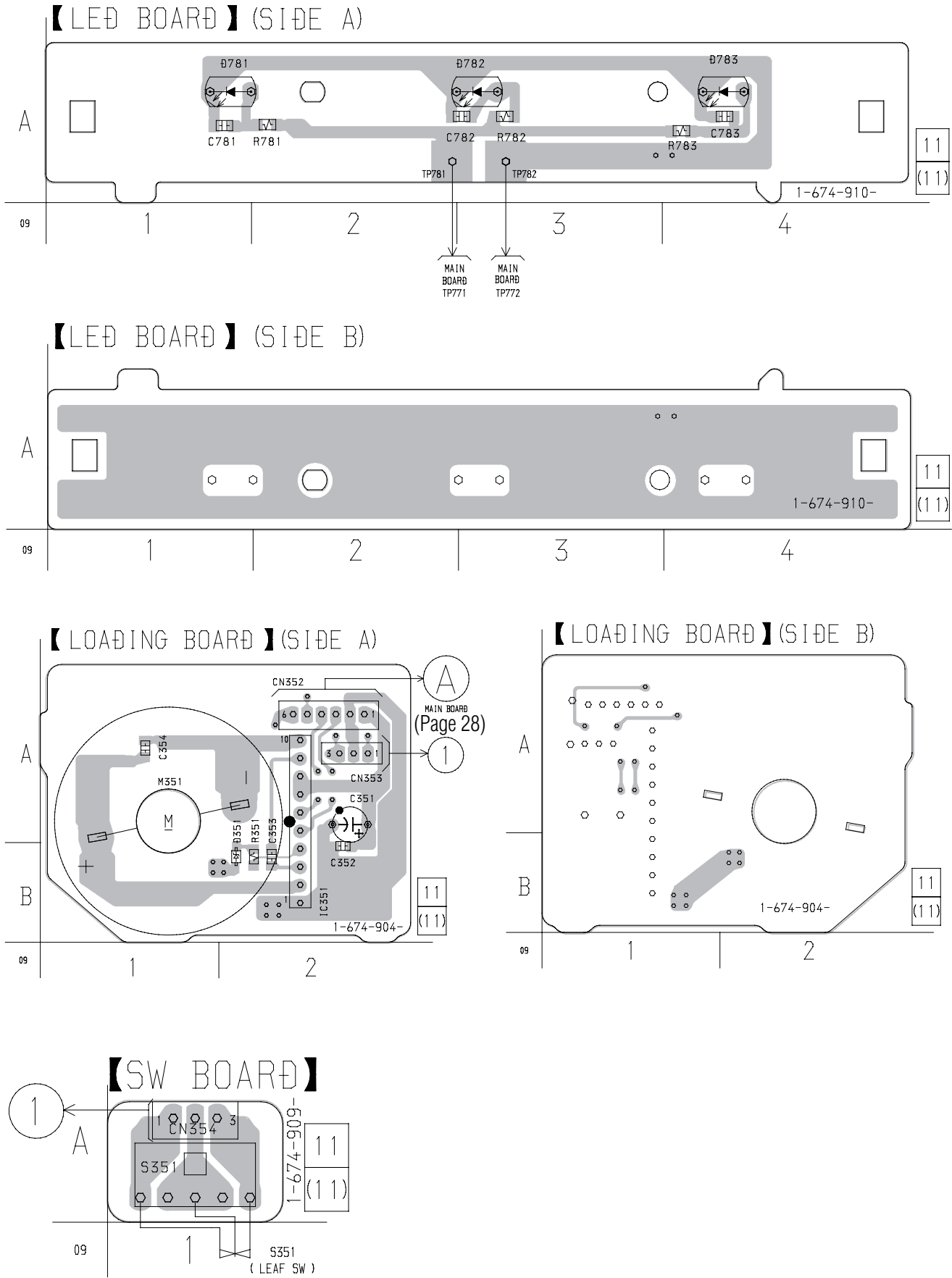
- See page 15 for Waveforms.
- See page 16 for Printed Wiring Board.
- See page 34 for IC Pin Functions.



5-6. SCHEMATIC DIAGRAM – LED/LOADING/SW SECTION –
• See page 31 for IC Block Diagrams.



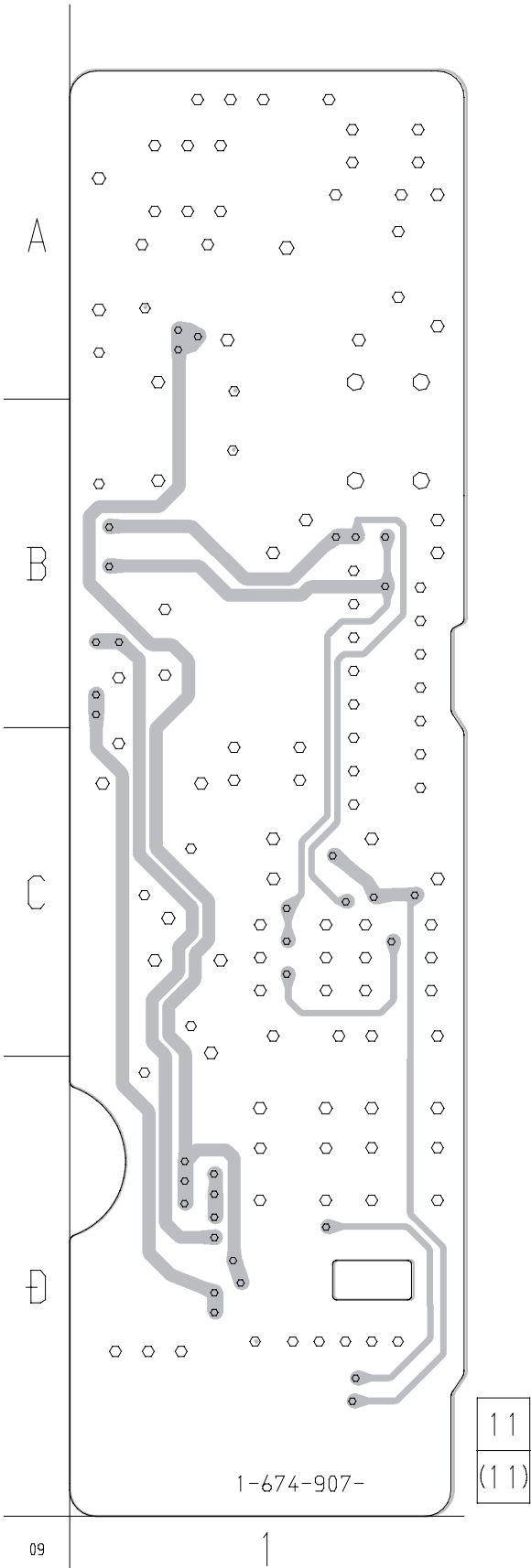
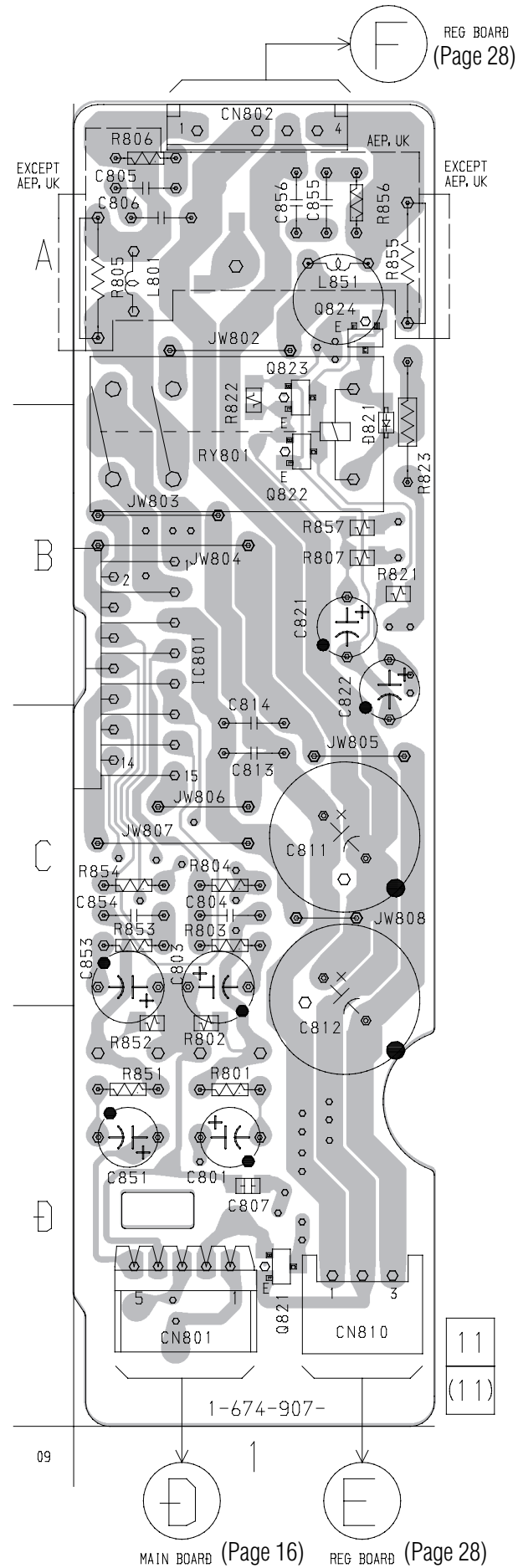
5-7. PRINTED WIRING BOARD – LED/LOADING/SW SECTION –
• See page 14 for Circuit Boards Location.



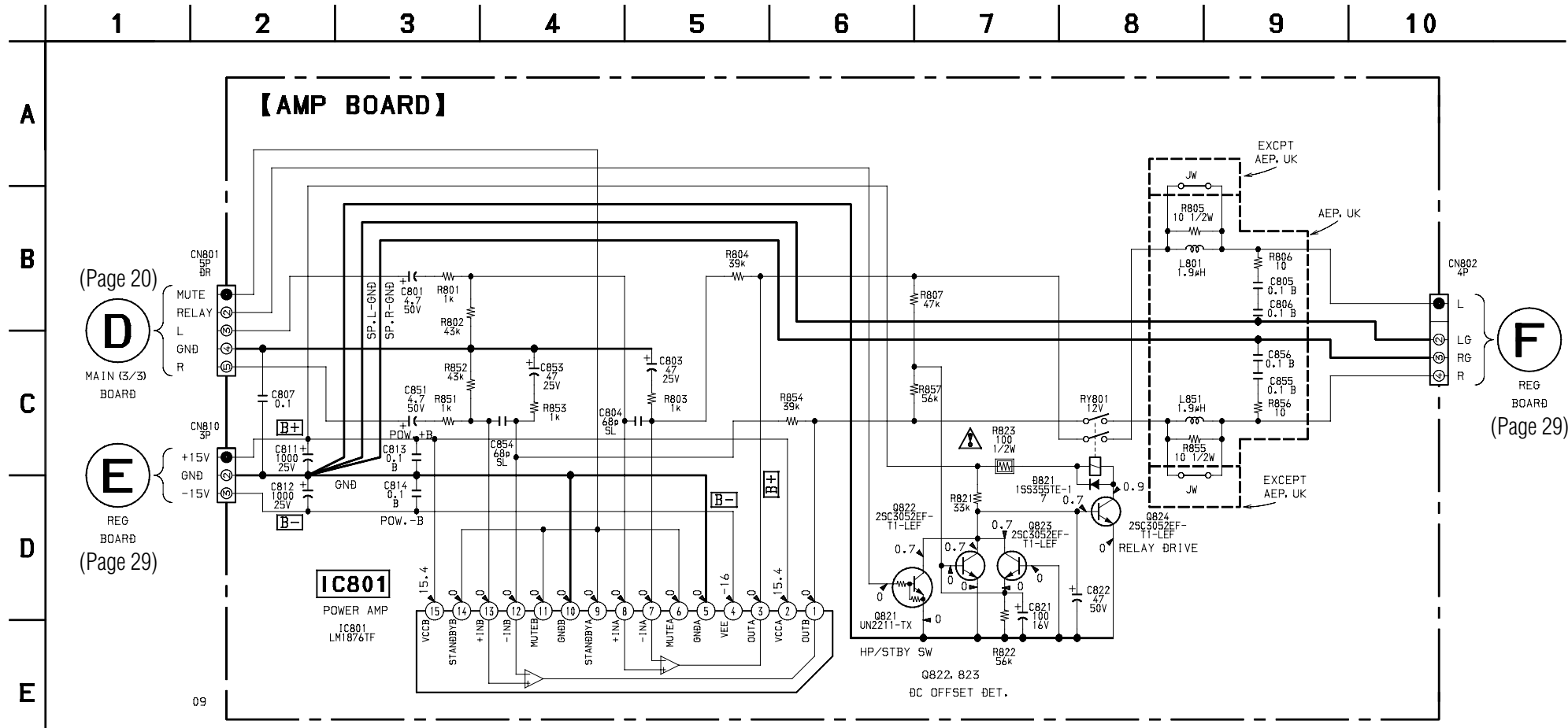
5-8. PRINTED WIRING BOARD – AMP SECTION –
• See page 14 for Circuit Boards Location.

【 AMP BOARD】(SIDE A)

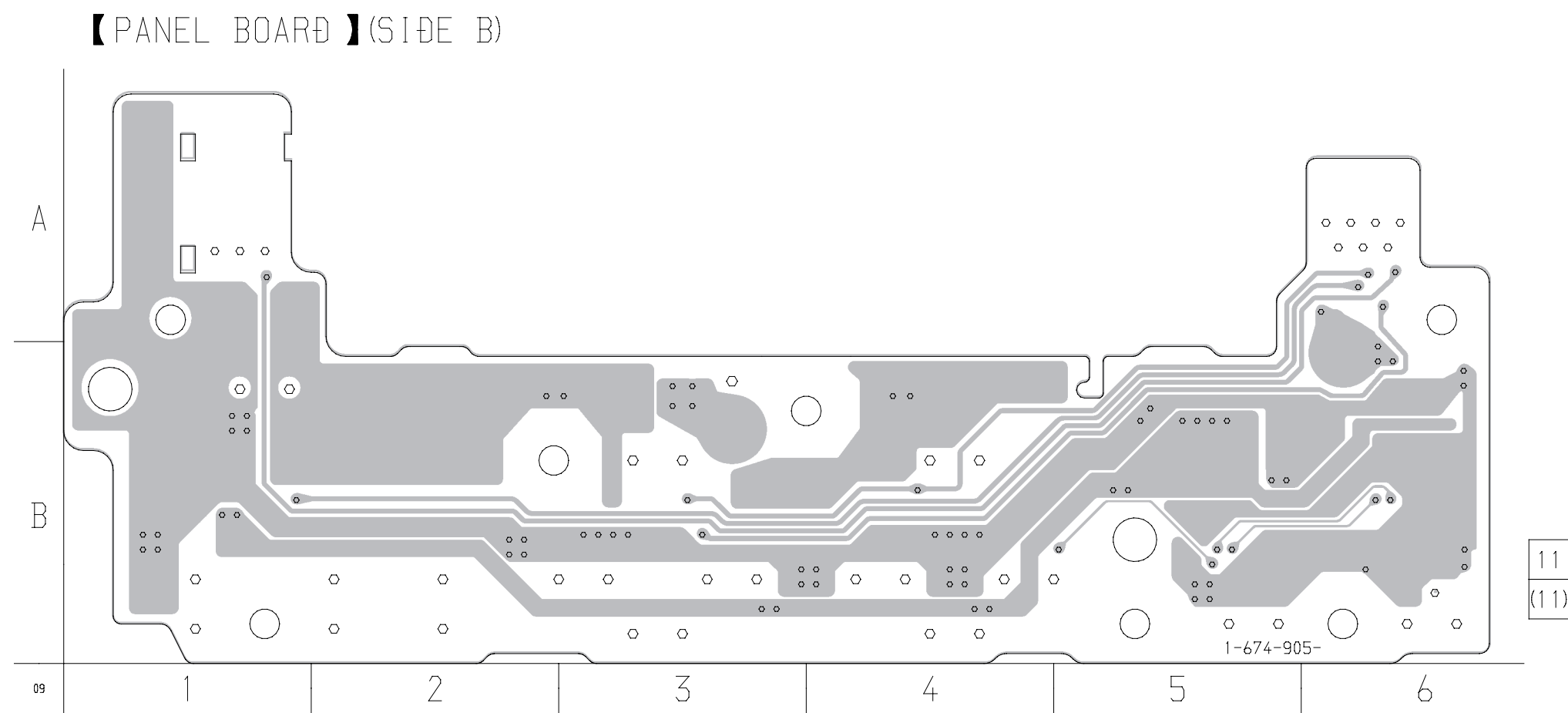
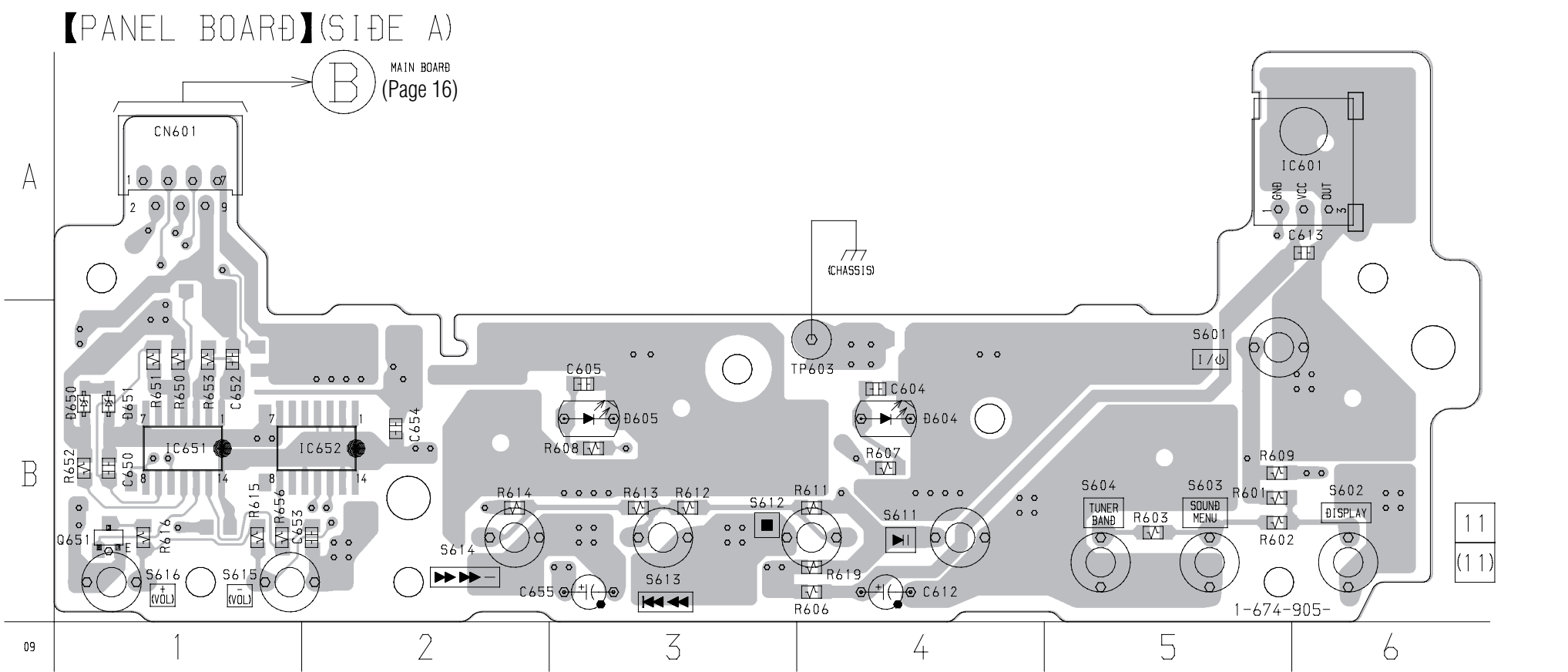
【 AMP BOARD】(SIDE B)



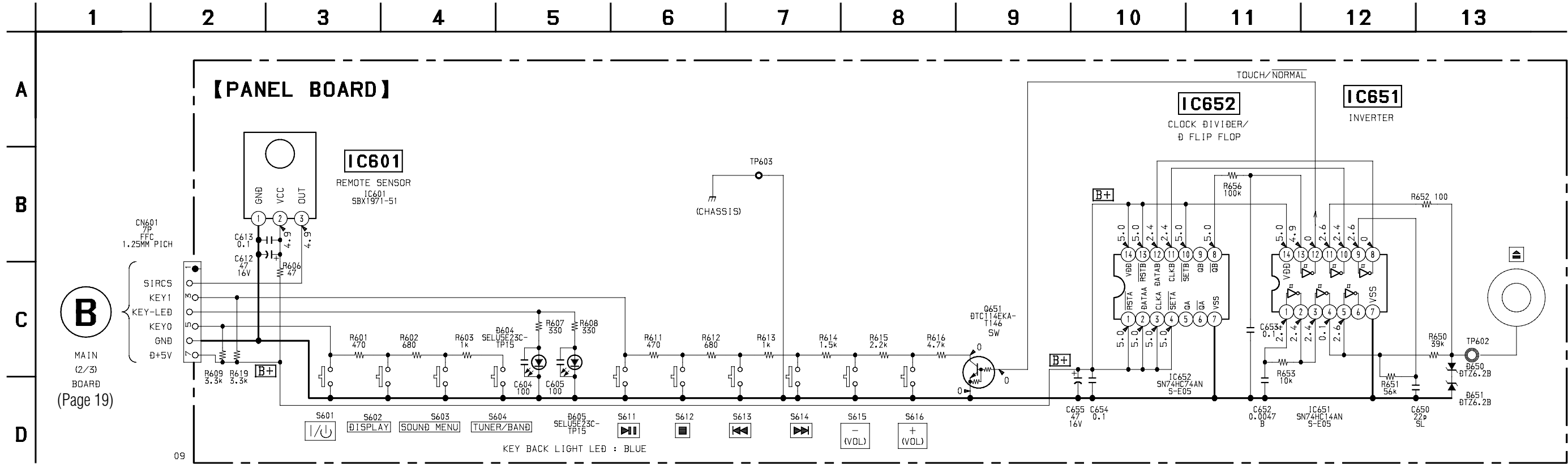
5-9. SCHEMATIC DIAGRAM – AMP SECTION –



5-10. PRINTED WIRING BOARD – PANEL SECTION –
• See page 14 for Circuit Boards Location.



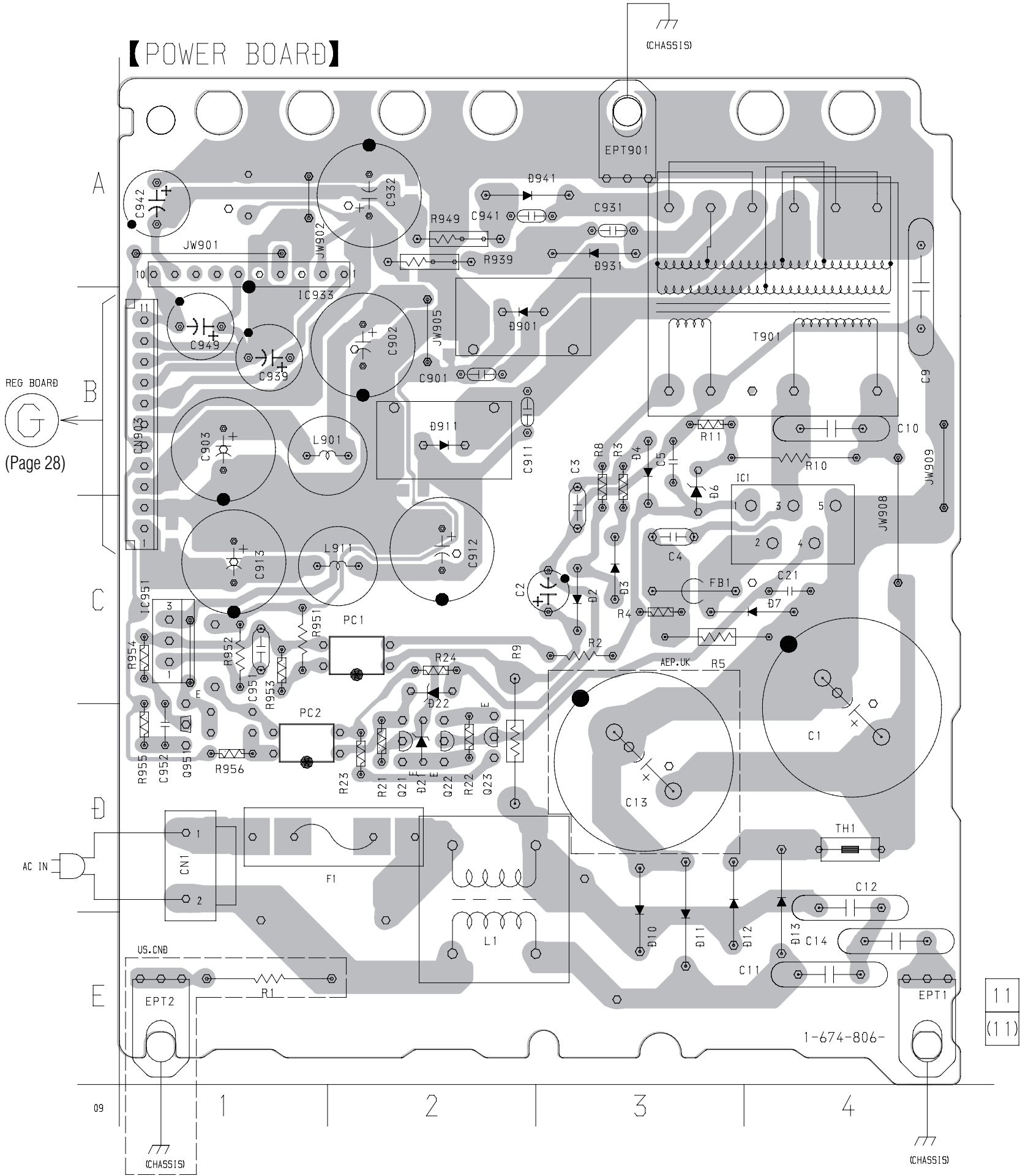
5-11. SCHEMATIC DIAGRAM – PANEL SECTION –



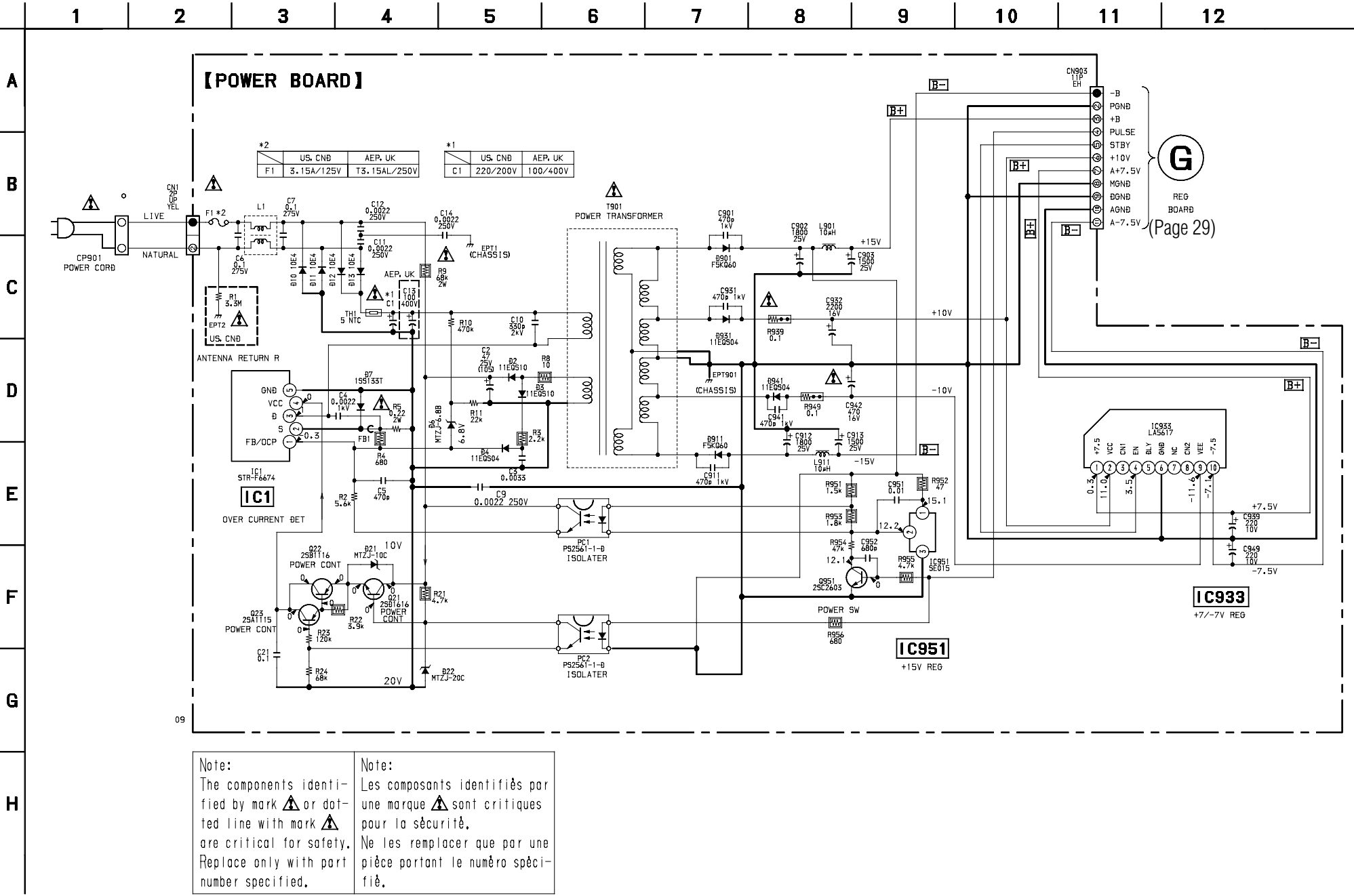
5-12. PRINTED WIRING BOARD – POWER SECTION –
• See page 14 for Circuit Boards Location.

• Semiconductor Location

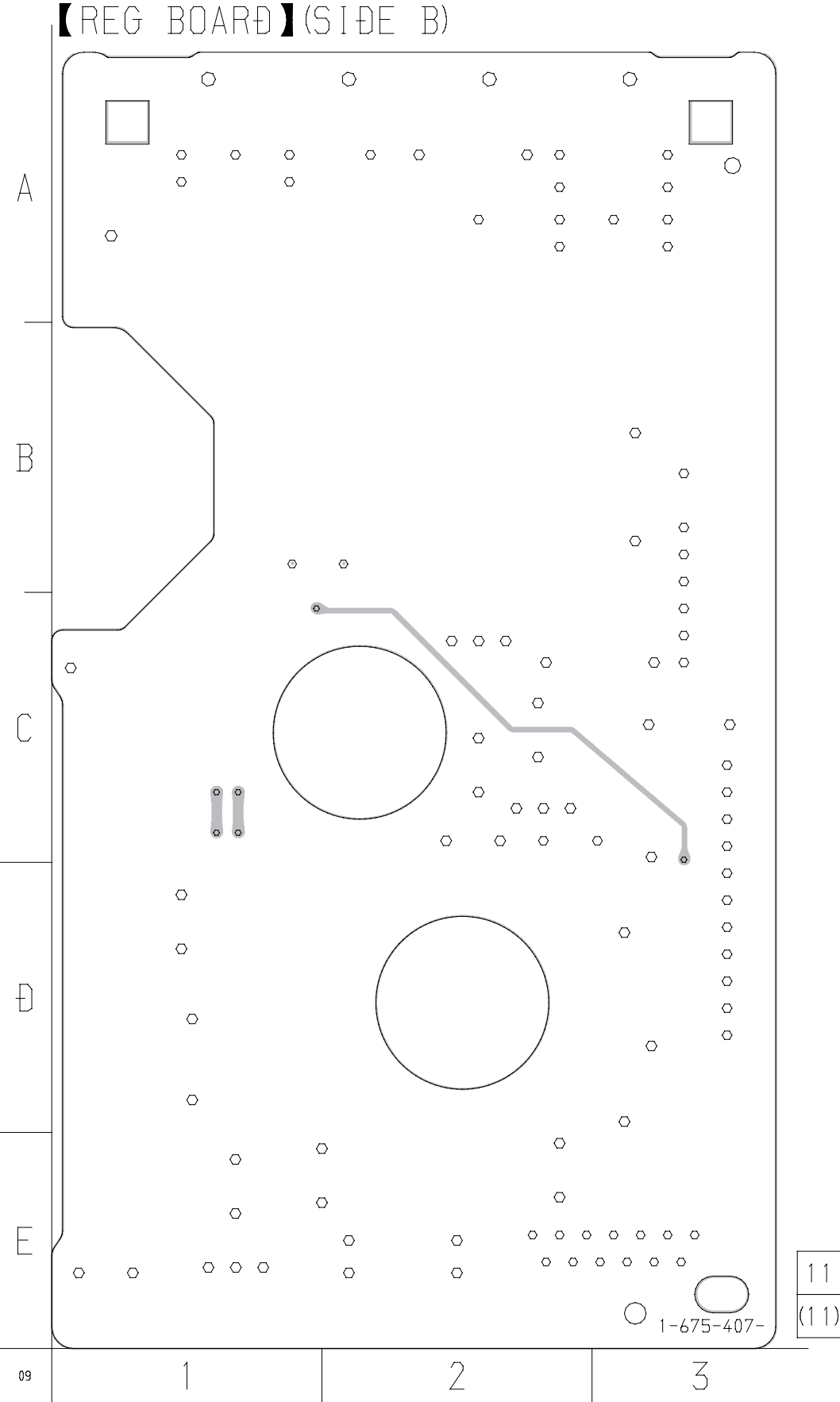
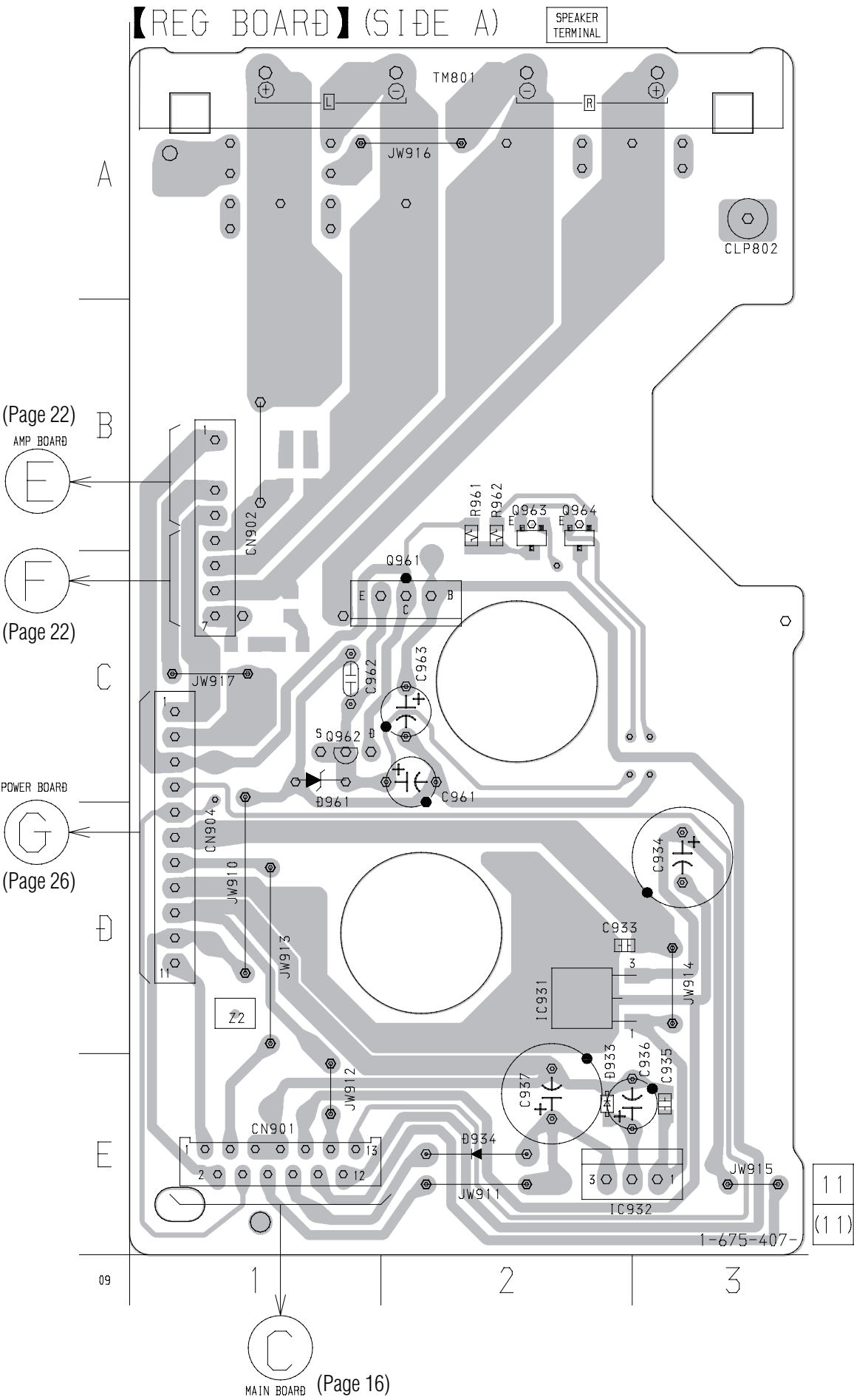
Ref. No.	Location
D2	C-3
D3	C-3
D4	B-3
D6	B-3
D7	C-4
D10	E-3
D11	E-3
D12	D-3
D13	D-3
D21	D-2
D22	C-2
D901	B-2
D911	B-2
D931	A-3
D941	A-2
IC1	C-4
IC933	A-1
IC951	B-1
Q21	D-2
Q22	D-2
Q23	D-2
Q951	D-1



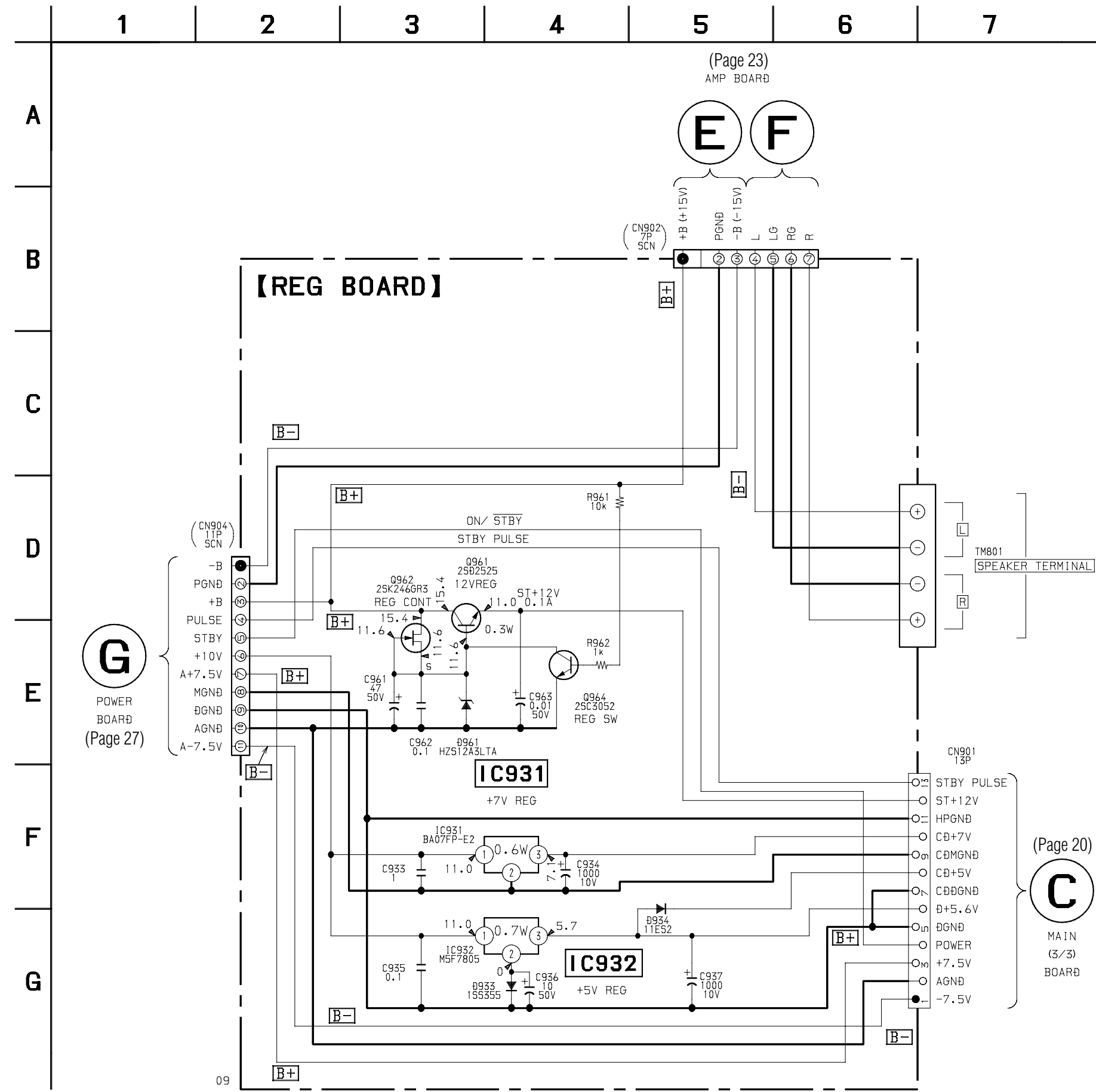
5-13. SCHEMATIC DIAGRAM – POWER SECTION –



5-14. PRINTED WIRING BOARD – REG SECTION –
• See page 14 for Circuit Boards Location.



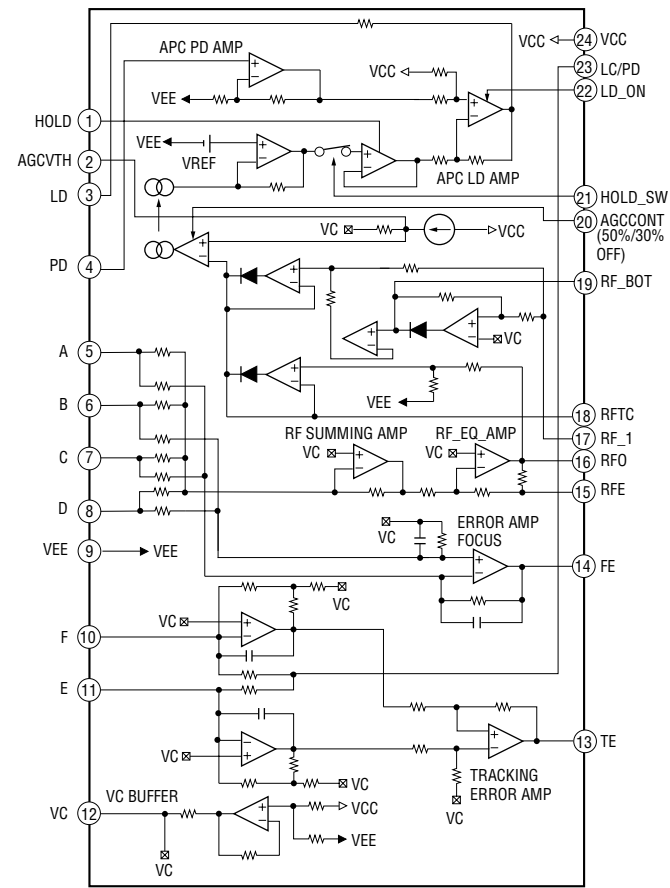
5-15. SCHEMATIC DIAGRAM – REG SECTION –



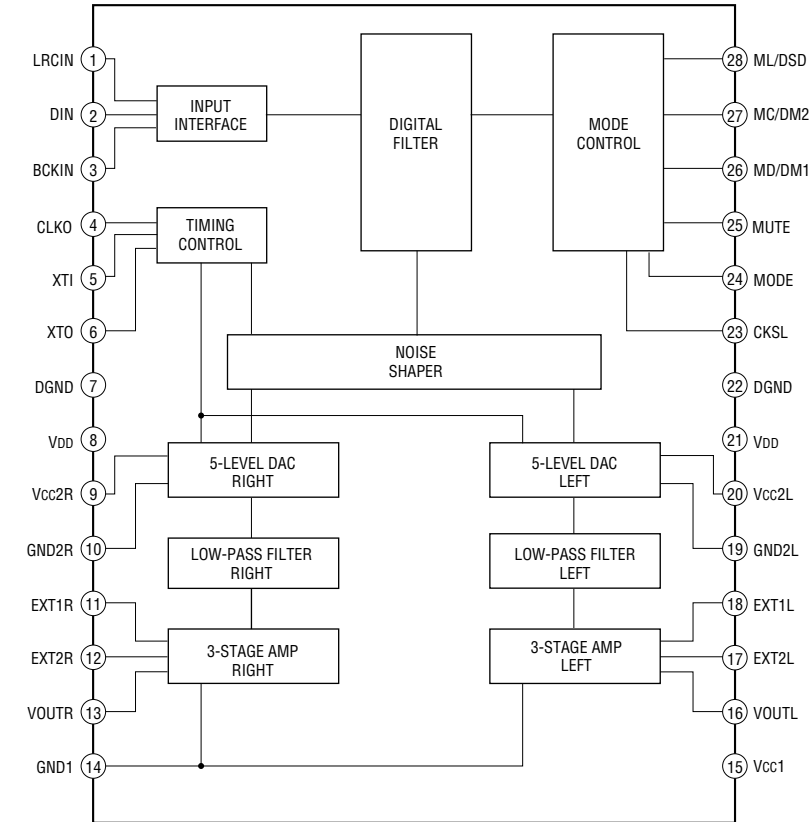
5-16. IC BLOCK DIAGRAMS

• MAIN Board (1/3)

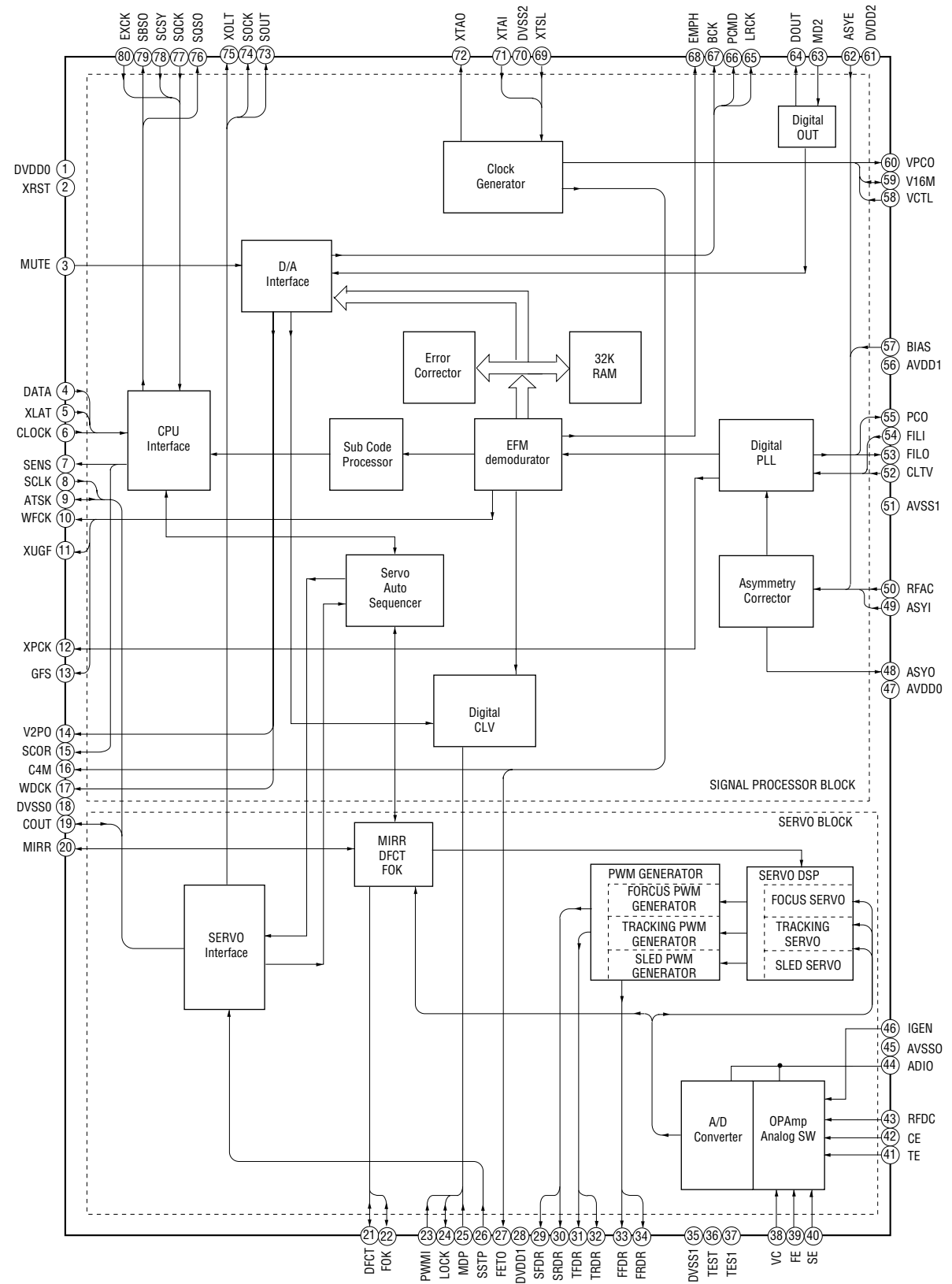
IC301 CXA2568M-T6



IC304 PCM1710U-B/1K

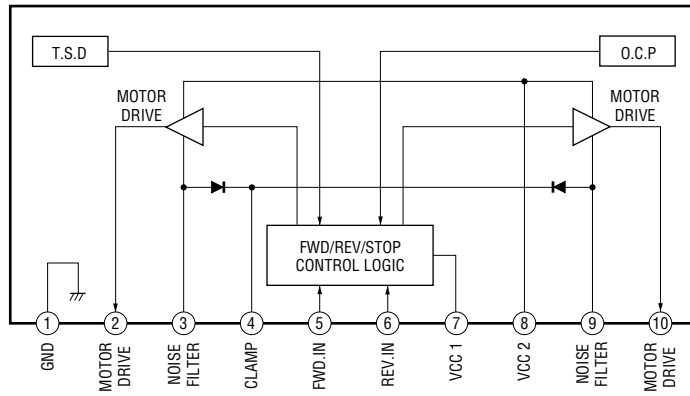


IC303 CXD2585Q



• **LOADING Board**

IC351 LB1641



5-17. IC PIN FUNCTIONS

• IC303 DIGITAL SERVO & DIGITAL SIGNAL PROCESSOR (CXA2585Q) (MAIN Board (1/3))

Pin No.	Pin Name	I/O	Function
1	DVDD	–	Digital power supply
2	XRST	I	System reset “L” : reset
3	MUTE	I	Muting input “H” : mute
4	DATA	I	Serial data input, supplied from CPU
5	XLAT	I	Latch input, supplied from CPU
6	CLOCK	I	Serial data transfer clock input, supplied from CPU
7	SENS	O	SENS signal output to CPU
8	SCLK	I	SENS serial data read-out clock input
9	ATSK	I/O	Input pin for anti-shock (Connected to ground)
10	WFCK	O	WFCK output (Not used)
11	XUGF	O	Not used
12	XPCK	O	Not used
13	GFS	O	Not used
14	C2PO	O	Not used
15	SCOR	O	Sub-code sync output
16	CM4	O	4.2336 MHz output (Not used)
17	WDCK	O	Word clock output ($f = 2Fs$)
18	DVSS	–	Digital ground
19	COUT	I/O	Numbers of track counted signal input/output (Not used)
20	MIRR	I/O	Mirror signal input/output
21	DFCT	I/O	Defect signal input/output
22	FOK	I/O	Focus OK input/output
23	PWMI	I	Spindle motor external control input (Connected to ground)
24	LOCK	I/O	GFS is sampled by 460 Hz. H when GFS is H (Not used)
25	MDP	O	Output to control spindle motor servo
26	SSTP	I	Input signal to detect disc inner most track
27	FSTO	O	2/3 divider output of pin 71
28	DVDD1	–	Digital power supply
29	SFDR	O	Sled drive output
30	SRDR	O	Sled drive output
31	TFDR	O	Tracking drive output
32	TRDR	O	Tracking drive output
33	FFDR	O	Focus drive output
34	FRDR	O	Focus drive output
35	DVSS1	–	Digital ground
36	TEST	I	TEST pin connected normally to ground
37	TES1	I	TEST pin connected normally to ground
38	VC	I	Center voltage input pin
39	FE	I	Focus error signal input
40	SE	I	Sled error signal input

- Abbreviation
GFS : Guarded Frame Sync

Pin No.	Pin Name	I/O	Function
41	TE	I	Tracking error signal input
42	CE	I	Center servo analog input
43	RFDC	I	RF signal input
44	ADIO	O	Test pin (Not used)
45	AVSS0	–	Analog ground
46	IGEN	I	Stabilized current input for operational amplifiers
47	AVDD0	–	Analog power supply
48	ASYO	O	EFM full swing output
49	ASYI	I	Asymmetry compare voltage input
50	RFAC	I	EFM signal input
51	AVSS1	–	Analog ground
52	CLTV	I	Control voltage input for master VCO1
53	FILO	O	Filter output for master PLL
54	FILI	I	Filter input for master PLL
55	PCO	O	Charge-pump output for master PLL
56	AVDD1	–	Analog power supply
57	BIAS	I	Asymmetry circuit constant current input
58	VCTL	I	VCO2 control voltage input for wide band EFM PLL (Connected to VDD)
59	V16M	I/O	VCO2 oscillator input/output for wide band EFM PLL (Not used)
60	VPCO	O	Charge-pump output for wide band EFM PLL (Not used)
61	DVDD2	–	Digital power supply
62	ASYE	I	Asymmetry circuit ON/OFF input “L” OFF, “H” : ON (Connected to VDD)
63	MD2	I	Digital-out ON/OFF control input (Connected to VDD)
64	DOUT	O	Digital-out output pin
65	LRCK	O	D/A interface LR clock output ($f = F_s$)
66	PCMD	O	D/A interface serial data output
67	BCLK	O	D/A interface bit clock output
68	EMPH	O	Playback disc output in emphasis mode (Not used)
69	XTSL	I	X'tal selection input (Connected to ground)
70	DVSS2	–	Digital ground
71	XTAI	I	X'tal oscillator circuit input
72	XTAO	O	X'tal oscillator circuit output (Not used)
73	SOUT	O	Serial data output in servo block (Not used)
74	SOCK	O	Serial data read clock output in servo block (Not used)
75	XOLT	O	Serial data latch output in servo block (Not used)
76	SQSO	O	Sub-Q 80-bit and PCM peak level data output (CD text data output)
77	SQCK	I	Clock input for SQSO read-out
78	SCSY	I	Connected to ground
79	SBSO	O	Sub-P through Sub-W serial output (Not used)
80	EXCK	I	Clock input for SBSO read-out (Connected to ground)

- Abbreviation
EFM : Eight to Fourteen Modulation
PLL : Phase Locked Loop

• IC701 uCOM (UPD780306GF-024-3BA) (MAIN Board (3/3))

Pin No.	Pin Name	I/O	Function
1	TUNED	I	ST tuning
2	PLL_CE	O	ST PLL CE
3	PLL_DATAI	I	ST PLL IN data
4	PLL_DATAO	O	ST PLL OUT data
5	PLL_CLK	O	ST PLL CLK
6	GND	–	Ground (Programing)
7	XOUT	–	5MHz (Main clock)
8	XIN	–	
9	VDD1	–	Ground
10	XT1	–	32KHz (Sub clock)
11	XT2	–	
12	RESET	I	uCOM reset in
13	REMOTE	I	SIRCS IN
14	RDS_CLK	I	ST RDS clock
15	POWDET	I	AC power down detect
16	SCOR	I	CD SCOR
17	RDS_DATA	I	ST RDS data
18	SENSE	I	CD SENS
19	SUB Q	I	CD SUBQ IN data
20	BACKLIGHT	O	LCD back light
21	SERVO_CK	O	CD SQCK/SCLK (for serial in)
22	XLAT	O	CD data latch
23	XRST	O	CD (BC) reset
24	SCLK	O	CD CLOCK/PCM1710 CLK
25	MUTE_D	O	CD digital mute
26	CD_POWER	O	CD (BD) power
27	AVSS	–	Ground
28	KEYIO_1	I	KEY
29	KEYIO_2	I	
30	BAND_AREA	I	Destination setting
31	DA_LAT	O	PCM1710 latch
32	LPH	O	CD LPH
33	LDON	O	CD LASER ON
34	OPEN_SW	I	OPEN SW
35	CLOSE_SW	I	CLOSE SW
36	VDD0	–	+5V
37	AVREF	–	
38	AMP_MUTE	O	POWER AMP MUTE
39	DATA	O	CD CMD/PCM1710 OUT DATA
40	VSS1	–	Ground
41	OPEN	O	CD loading motor open
42	CLOSE	O	CD loading motor close
43	POWER	O	System power
44	TA_MUTE	O	TA MUTE
45	SP_RELAY	O	Speaker relay
46	ST_MUTE	O	ST MUTE
47	SLEEP	O	Power supply sleep control
48	VOL_CLK	O	VOL CLK
49	VOL_DATA	O	VOL OUT data
50	VOL_STB	O	VOL STB

Pin No.	Pin Name	I/O	Function
51 to 54	COM0 to COM3	O	LCD COMMON
55	BIAS	O	LCD DRIVE POWER
56 to 58	VLC0 to VLC2	O	LCD DRIVER POWER
59	VSS0	O	Ground
60 to 99	SEG0 to SEG39	O	FL segment signal output
100	STEREO	I	ST STEREO

SECTION 6 EXPLODED VIEWS

NOTE:

- -XX, -X mean standardized parts, so they may have some difference from the original one.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- Color Indication of Appearance Parts Example:
KNOB, BALANCE (WHITE)

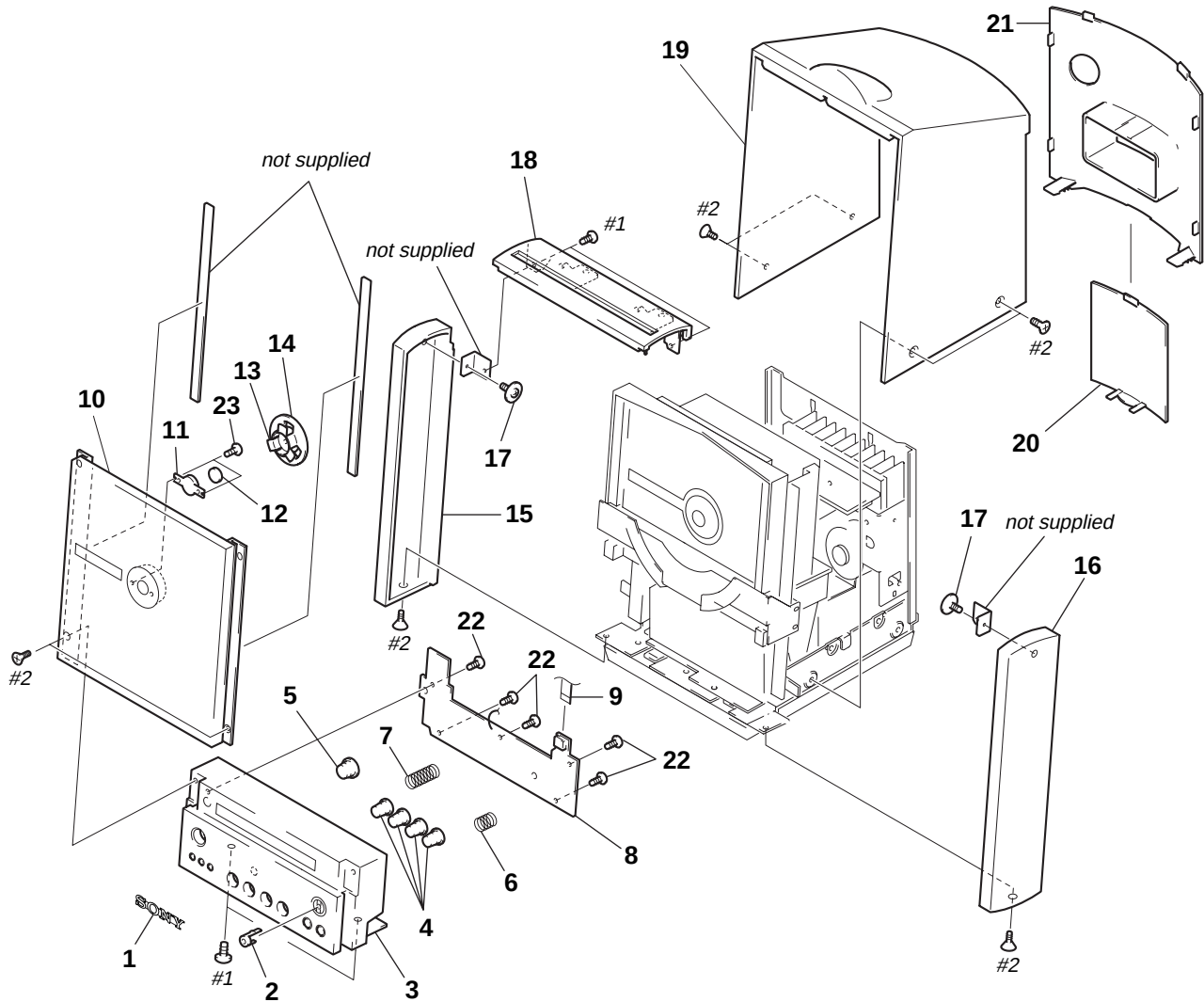
↑
Parts color

- The mechanical parts with no reference number in the exploded views are not supplied.
- Hardware (# mark) list and accessories and packing materials are given in the last of this parts list.
- Abbreviation
CND : Canadian model

The components identified by mark $\triangle$ or dotted line with mark $\triangle$ are critical for safety.
Replace only with part number specified.

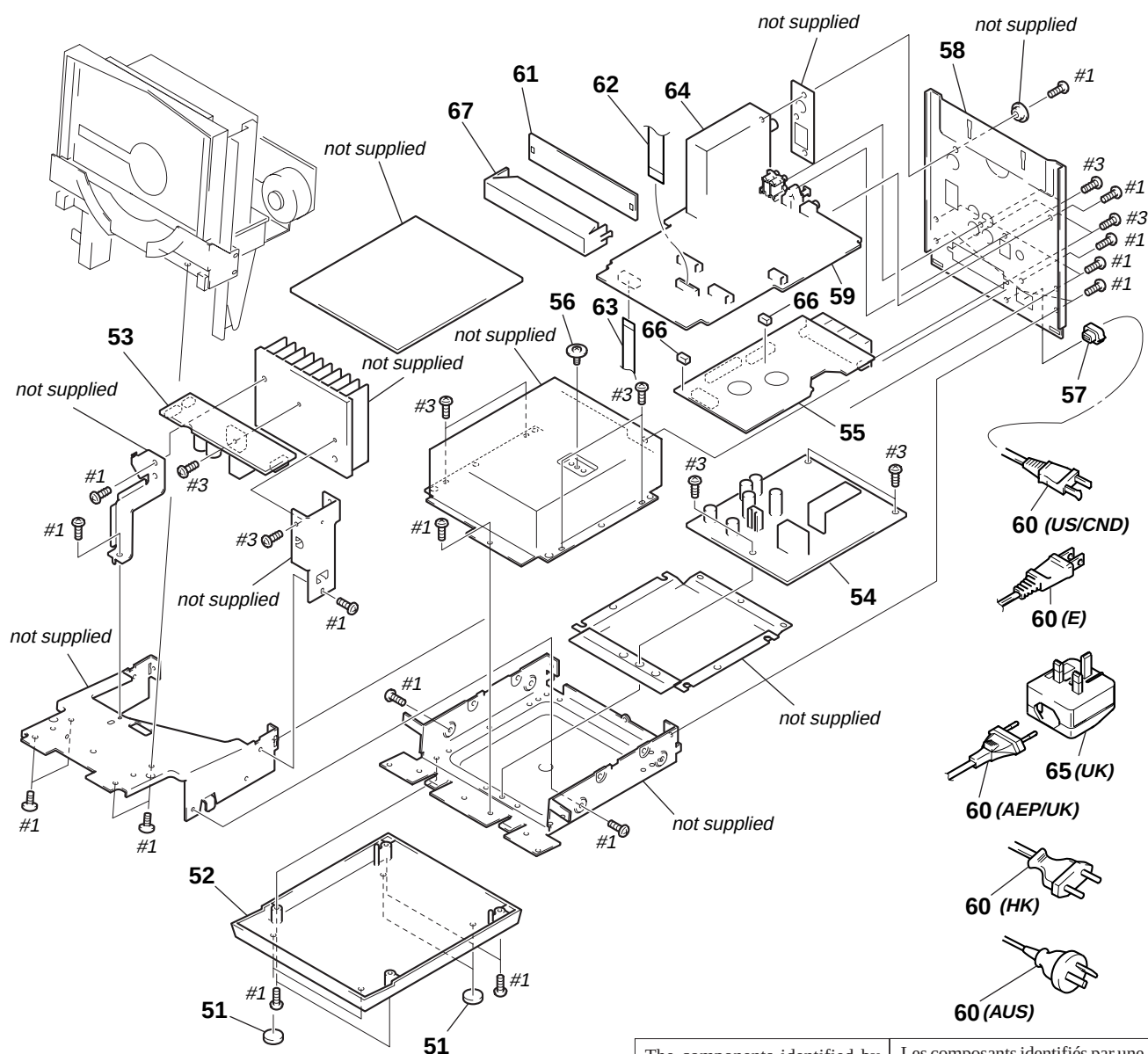
Les composants identifiés par une marque $\triangle$ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

6-1. FRONT PANEL AND CASE SECTION



Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
1	4-969-961-11	EMBLEM(NO.4), SONY		13	4-222-709-01	YOKE(ST)	
2	4-222-620-01	RING (EJECT)		14	4-222-704-01	STABILIZER	
3	4-222-713-01	PANEL(BASE), FRONT					
4	4-222-720-01	BUTTON(PLAY)		15	4-222-711-01	PLATE(L), SIDE	
5	4-222-719-01	BUTTON(POWER)		16	4-222-710-01	PLATE(R), SIDE	
6	4-222-742-01	SPRING(EJECT)		17	4-985-672-01	SCREW(+PTPWHM2.6), FLOATING	
7	4-222-743-01	SPRING(EARTH)		18	4-222-712-01	PLATE, TOP	
8	A-4426-743-A	PANEL MOUNTED PC BOARD		19	4-222-716-01	CASE	
9	1-769-889-11	WIRE(FLAT TYPE) (7 CORE)		20	4-222-718-01	COVER(PIN JACK)	
10	X-4952-306-1	WINDOW (GLASS) ASSY (US,CND)		21	4-222-717-01	COVER(BACK)	
10	X-4952-307-1	WINDOW (GLASS) ASSY (EXCEPT US,CND)		22	4-951-620-01	SCREW (2.6x8), +BVTP	
11	4-222-707-01	YOKE(MG)		23	3-927-664-01	SCREW (2x3)	
12	4-222-703-01	MAGNET					

6-2. CHASSIS SECTION

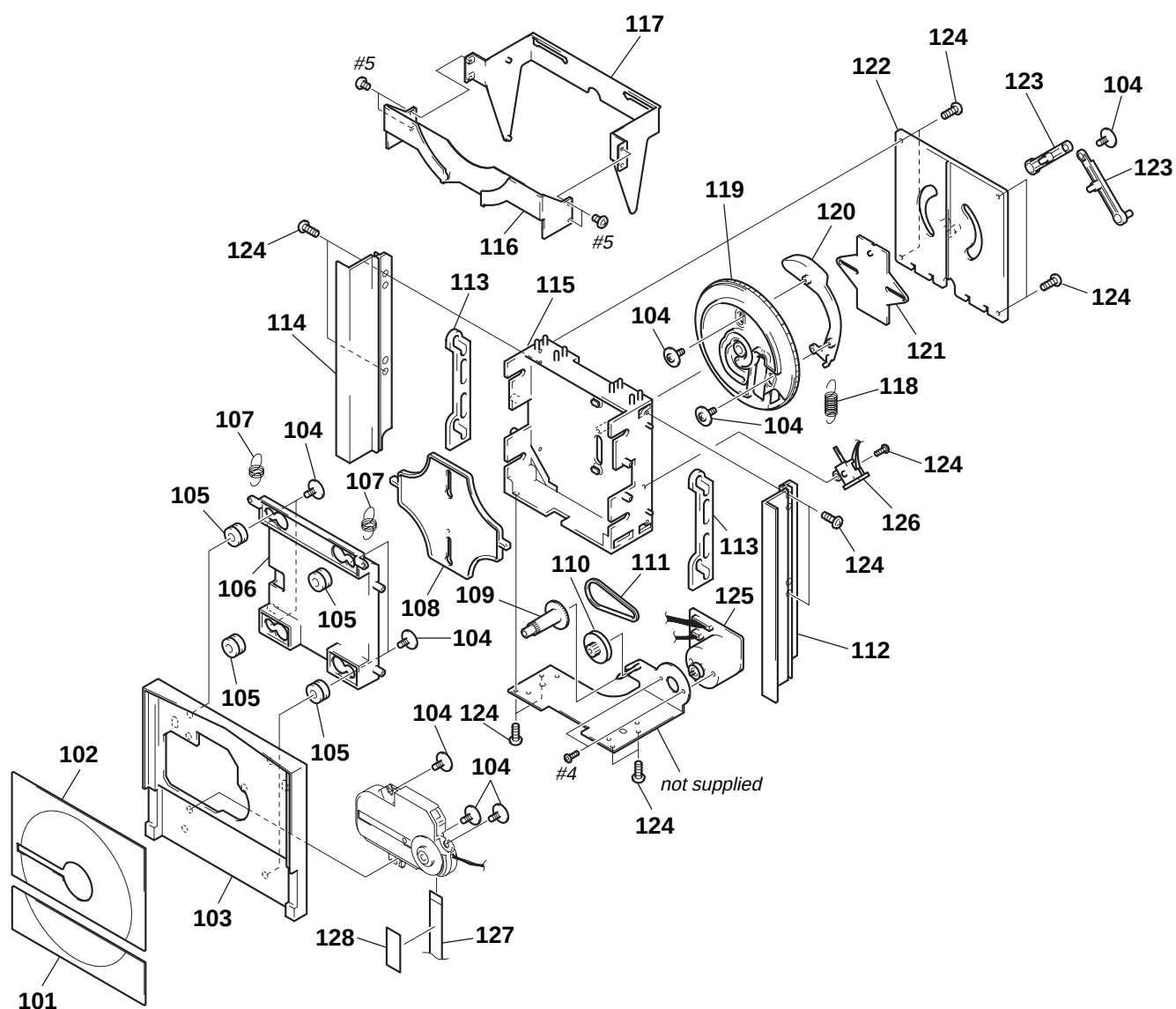


The components identified by mark  or dotted line with mark  are critical for safety. Replace only with part number specified.

Les composants identifiés par une marque  sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

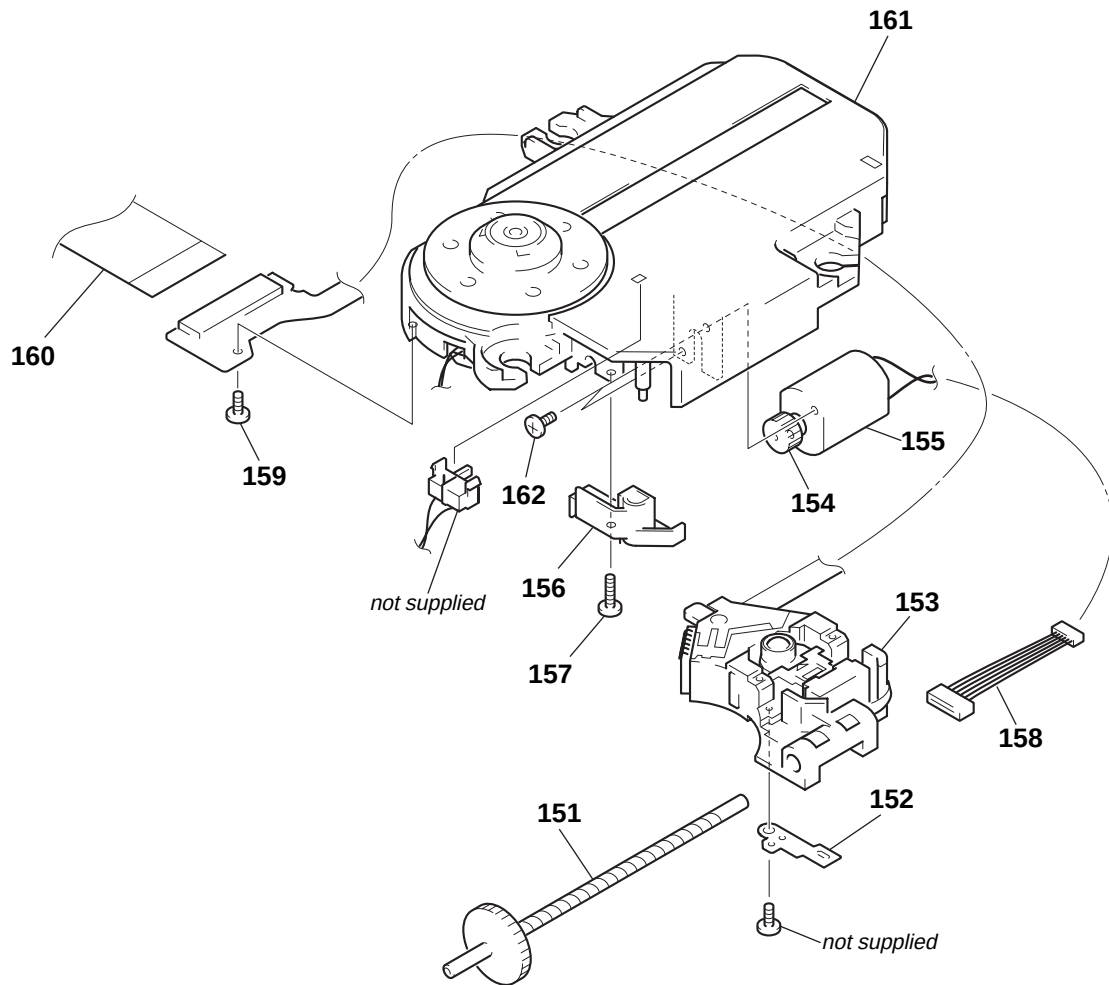
Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
51	4-220-455-01	FOOT(FELT)		59	A-4426-752-A	MAIN MOUNTED PC BOARD (EXCEPT US,CND)	
52	4-222-715-01	PLATE, BOTTOM		△ 60	1-575-651-21	CORD,POWER (AEP,UK)	
53	A-4426-745-A	AMP MOUNTED PC BOARD (US,CND)		△ 60	1-783-531-31	CORD,POWER (US,CND)	
53	A-4426-754-A	AMP MOUNTED PC BOARD (EXCEPT US,CND)		61	1-674-910-11	LED BOARD	
54	A-4426-744-A	POWER MOUNTED PC BOARD (US,CND)					
				62	1-791-698-11	WIRE (FLAT TYPE) (16 CORE)	
54	A-4426-753-A	POWER MOUNTED PC BOARD (EXCEPT US,CND)		63	1-769-973-11	WIRE (FLAT TYPE) (13 CORE)	
* 55	1-675-407-11	REG BOARD		64	1-693-407-13	TUNER (US,CND)	
56	4-985-672-01	SCREW(+PTPWHM2.6), FLOATING		64	1-693-408-12	TUNER (EXCEPT US,CND)	
57	3-703-244-00	BUSHING (2104), CORD		△ 65	1-770-019-11	ADAPTOR, CONVERSION PLUG 3P (UK)	
58	4-222-730-01	PANEL, BACK					
				66	3-314-903-01	CUSHION	
59	A-4426-742-A	MAIN MOUNTED PC BOARD (US,CND)		67	4-222-714-01	HOUSE, LAMP	

6-3. MECHANISM SECTION



Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
101	4-222-746-01	PLATE (CD) (LOWER), ORNAMENTAL		116	4-222-688-01	HOLDER, DISC	
102	4-222-745-01	PLATE (CD) (UPPER), ORNAMENTAL		117	4-222-813-01	SLIDER (2)	
103	4-222-701-01	PANEL, MECHANICAL		118	4-225-227-01	SPRING (ABSORBER), TENSION COIL	
104	4-985-672-31	SCREW (+PTPWHM2.6), FLOATING		119	4-225-228-01	CAM(A)	
105	4-222-697-01	RUBBER, FLOATING		120	4-225-226-01	ABSORBER	
106	4-222-692-01	HOLDER, BU		121	4-222-689-01	SLIDER (3)	
107	4-222-702-01	SPRING, TENSION		122	4-222-690-01	COVER, MECHANICAL	
108	4-222-685-01	SLIDER (1)		123	4-222-691-01	LEVER (1)	
109	4-222-694-01	GEAR(1)		124	4-951-620-01	SCREW (2.6X8), +BVTP	
110	4-999-513-01	GEAR, PULLEY		* 125	1-674-908-11	LOADING BOARD	
111	4-999-537-01	BELT(LOADING)		* 126	1-674-909-11	SW BOARD	
112	4-222-695-01	GUIDE (R)		127	1-791-698-11	WIRE (FLAT TYPE) (16 CORE)	
113	4-222-693-01	SLIDER (4)		128	3-831-441-99	CUSHION	
114	4-222-700-01	GUIDE (L)					
115	4-222-687-01	BASE, MECHANICAL					

6-4. BASE UNIT SECTION



The components identified by mark $\triangle$ or dotted line with mark $\triangle$ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque $\triangle$ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.
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Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
151	X-2646-555-1	SCREW ASSY, SLED		157	2-646-352-01	SCREW, BTP2x8	
152	2-647-505-01	SPRING, RACK		158	1-960-065-11	HARNESS	
$\triangle$ 153	8-820-087-11	OPTICAL PICK-UP KSS-770A/S-N1		159	2-646-358-11	SCREW, BTP1.7x4	
154	2-647-506-01	GEAR, MOTOR					
155	1-763-381-11	MOTOR, DC		160	1-791-698-11	WIRE (FLAT TYPE) (16 CORE)	
156	2-647-504-01	HOLDER		161	2-647-507-01	TURN TABLE (HIFI)	
				162	2-627-669-11	SCREW M1.7x2	

AMP

LED

SECTION 7

ELECTRICAL PARTS LIST

Note:

The components identified by mark Δ or dotted line with mark Δ are critical for safety. Replace only with part number specified.

Les composants identifiés par une marque Δ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

When indicating parts by reference number, please include the board name.

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX, -X mean standardized parts, so they may have some difference from the original one.
- Items marked “*” are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- RESISTORS
All resistors are in ohms
METAL: Metal-film resistor
METAL OXIDE: Metal Oxide-film resistor
F : nonflammable

- SEMICONDUCTORS
In each case, u: μ , for example:
uA...: μ A..., uPA...: μ PA..., uPB...: μ PB...,
uPC...: μ PC..., uPD...: μ PD...
- CAPACITORS
uF : μ F
- COILS
uH : μ H
- Abbreviation
CND : Canadian model

Ref. No.	Part No.	Description	Remark			
	A-4426-754-A	AMP BOARD, COMPLETE (EXCEPT US,CND)	*****			
	A-4426-745-A	AMP BOARD, COMPLETE (US,CND)	*****			
		< CAPACITOR >				
C801	1-126-047-71	ELECT	4.7uF	20%	50V	
C803	1-126-022-11	ELECT	47uF	20%	25V	
C804	1-162-219-31	CERAMIC	68PF	5%	50V	
C805	1-164-159-21	CERAMIC	0.1uF		50V	
C806	1-164-159-21	CERAMIC	0.1uF		50V	
C807	1-163-038-91	CERAMIC CHIP	0.1uF		25V	
C811	1-126-027-11	ELECT	1000uF	20%	25V	
C812	1-126-027-11	ELECT	1000uF	20%	25V	
C813	1-164-159-21	CERAMIC	0.1uF		50V	
C814	1-164-159-21	CERAMIC	0.1uF		50V	
C821	1-126-933-11	ELECT	100uF	20%	16V	
C822	1-126-967-11	ELECT	47uF	20%	50V	
C851	1-126-047-71	ELECT	4.7uF	20%	50V	
C853	1-126-022-11	ELECT	47uF	20%	25V	
C854	1-162-219-31	CERAMIC	68PF	5%	50V	
C855	1-164-159-21	CERAMIC	0.1uF		50V	
C856	1-164-159-21	CERAMIC	0.1uF		50V	
		< CONNECTOR >				
* CN801	1-568-943-11	PIN, CONNECTOR 5P				
CN802	1-691-766-11	PLUG (MICRO CONNECTOR) 4P				
* CN810	1-564-518-11	PLUG, CONNECTOR 3P				
		< DIODE >				
D821	8-719-988-61	DIODE 1SS355TE-17				
		< IC >				
IC801	8-759-333-24	IC LM1876TF				
		< COIL >				
L801	1-420-872-00	COIL, AIR-CORE (EXCEPT US,CND)				
L851	1-420-872-00	COIL, AIR-CORE (EXCEPT US,CND)				
		< TRANSISTOR >				
Q821	8-729-900-53	TRANSISTOR DTC114EKA-T146				
Q822	8-729-120-28	TRANSISTOR 2SC3052EF-T1-LEF				
Q823	8-729-120-28	TRANSISTOR 2SC3052EF-T1-LEF				
Q824	8-729-120-28	TRANSISTOR 2SC3052EF-T1-LEF				

Ref. No.	Part No.	Description	Remark			
< RESISTOR >						
R801	1-249-417-11	CARBON	1K	5%	1/4W	F
R802	1-216-088-00	METAL CHIP	43K	5%	1/10W	
R803	1-249-417-11	CARBON	1K	5%	1/4W	F
R804	1-249-436-11	CARBON	39K	5%	1/4W	
R805	1-249-754-11	CARBON	10	5%	1/2W	
(EXCEPT US,CND)						
R806	1-249-393-11	CARBON	10	5%	1/4W	F
R807	1-216-089-91	RES,CHIP	47K	5%	1/10W	
R821	1-216-085-00	METAL CHIP	33K	5%	1/10W	
R822	1-216-091-00	METAL CHIP	56K	5%	1/10W	
△R823	1-247-739-11	CARBON	100	5%	1/2W	F
R851	1-249-417-11	CARBON	1K	5%	1/4W	F
R852	1-216-088-00	METAL CHIP	43K	5%	1/10W	
R853	1-249-417-11	CARBON	1K	5%	1/4W	F
R854	1-249-436-11	CARBON	39K	5%	1/4W	
R855	1-249-754-11	CARBON	10	5%	1/2W	
(EXCEPT US,CND)						
R856	1-249-393-11	CARBON	10	5%	1/4W	F
R857	1-216-091-00	METAL CHIP	56K	5%	1/10W	
< RELAY >						
RY801	1-515-921-11	RELAY (12V)				

	1-674-910-11	LED BOARD	*****			
< CAPACITOR >						
C781	1-163-251-11	CERAMIC CHIP	100PF	5%	50V	
C782	1-163-251-11	CERAMIC CHIP	100PF	5%	50V	
C783	1-163-251-11	CERAMIC CHIP	100PF	5%	50V	
< DIODE >						
D781	8-719-076-07	DIODE SELU2E10CRW1TP6				
D782	8-719-076-07	DIODE SELU2E10CRW1TP6				
D783	8-719-076-07	DIODE SELU2E10CRW1TP6				
< RESISTOR >						
R781	1-216-029-00	METAL CHIP	150	5%	1/10W	
R782	1-216-029-00	METAL CHIP	150	5%	1/10W	
R783	1-216-029-00	METAL CHIP	150	5%	1/10W	

Ref. No.	Part No.	Description	Remark			
	1-674-908-11	LOADING BOARD *****				
		< CAPACITOR >				
C351	1-104-665-11	ELECT	100uF	20%	16V	
C352	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C353	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C354	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
		< DIODE >				
D351	8-719-056-78	DIODE UDZ-TE-17-4.3B				
		< IC >				
IC351	8-759-822-09	IC LB1641				
		< RESISTOR >				
R351	1-216-025-91	RES,CHIP	100	5%	1/10W	

	A-4426-742-A	MAIN BOARD, COMPLETE (US,CND) *****				
	A-4426-752-A	MAIN BOARD, COMPLETE (EXCEPT US,CND) *****				
		< CAPACITOR >				
C101	1-163-251-11	CERAMIC CHIP	100PF	5%	50V	
C102	1-163-251-11	CERAMIC CHIP	100PF	5%	50V	
C111	1-136-173-00	MYLAR	0.47uF	5%	50V	
C112	1-163-022-00	CERAMIC CHIP	0.012uF	10%	50V	
C113	1-163-989-11	CERAMIC CHIP	0.033uF	10%	25V	
C114	1-163-011-11	CERAMIC CHIP	0.0015uF	10%	50V	
C115	1-163-017-00	CERAMIC CHIP	0.0047uF	5%	50V	
C116	1-164-182-11	CERAMIC CHIP	0.0033uF	10%	50V	
C117	1-126-964-11	ELECT	10uF	20%	50V	
C118	1-126-964-11	ELECT	10uF	20%	50V	
C119	1-163-006-11	CERAMIC CHIP	560PF	10%	50V	
C120	1-136-165-00	MYLAR	0.1uF	5%	50V	
C121	1-136-165-00	MYLAR	0.1uF	5%	50V	
C131	1-128-834-11	ELECT	470uF	20%	10V	
C132	1-128-834-11	ELECT	470uF	20%	10V	
C133	1-163-038-91	CERAMIC CHIP	0.1uF		25V	
C134	1-163-038-91	CERAMIC CHIP	0.1uF		25V	
C135	1-126-964-11	ELECT	10uF	20%	50V	
C136	1-163-038-91	CERAMIC CHIP	0.1uF		25V	
C137	1-163-038-91	CERAMIC CHIP	0.1uF		25V	
C138	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V	
C139	1-164-346-11	CERAMIC CHIP	1uF		16V	
C151	1-163-251-11	CERAMIC CHIP	100PF	5%	50V	
C152	1-163-251-11	CERAMIC CHIP	100PF	5%	50V	
C161	1-136-173-00	MYLAR	0.47uF	5%	50V	
C162	1-163-022-00	CERAMIC CHIP	0.012uF	10%	50V	
C163	1-163-989-11	CERAMIC CHIP	0.033uF	10%	25V	
C164	1-163-011-11	CERAMIC CHIP	0.0015uF	10%	50V	
C165	1-163-017-00	CERAMIC CHIP	0.0047uF	5%	50V	
C166	1-164-182-11	CERAMIC CHIP	0.0033uF	10%	50V	

Ref. No.	Part No.	Description	Remark			
C167	1-126-964-11	ELECT	10uF	20%	50V	
C168	1-126-964-11	ELECT	10uF	20%	50V	
C169	1-163-006-11	CERAMIC CHIP	560PF	10%	50V	
C170	1-136-165-00	MYLAR	0.1uF	5%	50V	
C171	1-136-165-00	MYLAR	0.1uF	5%	50V	
C176	1-164-344-11	CERAMIC CHIP	0.068uF	10%	25V	
C177	1-163-021-91	CERAMIC CHIP	0.01uF	10%	50V	
C301	1-163-038-91	CERAMIC CHIP	0.1uF		25V	
C302	1-163-038-91	CERAMIC CHIP	0.1uF		25V	
C303	1-104-664-11	ELECT	47uF	20%	10V	
C304	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V	
C305	1-104-665-11	ELECT	100uF	20%	10V	
C306	1-126-964-11	ELECT	10uF	20%	50V	
C307	1-163-097-00	CERAMIC CHIP	15PF	5%	50V	
C308	1-163-217-11	CERAMIC CHIP	1PF	0.25PF	50V	
C309	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C311	1-164-346-11	CERAMIC CHIP	1uF		16V	
C312	1-163-038-91	CERAMIC CHIP	0.1uF		25V	
C313	1-163-038-91	CERAMIC CHIP	0.1uF		25V	
C314	1-104-664-11	ELECT	47uF	20%	10V	
C321	1-110-501-11	CERAMIC CHIP	0.33uF	10%	16V	
C322	1-163-235-11	CERAMIC CHIP	22PF	5%	50V	
C323	1-163-235-11	CERAMIC CHIP	22PF	5%	50V	
C324	1-163-038-91	CERAMIC CHIP	0.1uF		25V	
C325	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V	
C326	1-163-017-00	CERAMIC CHIP	0.0047uF	5%	50V	
C327	1-163-038-91	CERAMIC CHIP	0.1uF		25V	
C328	1-126-927-11	ELECT	2200uF	20%	10V	
C331	1-164-346-11	CERAMIC CHIP	1uF		16V	
C332	1-164-346-11	CERAMIC CHIP	1uF		16V	
C333	1-163-017-00	CERAMIC CHIP	0.0047uF	5%	50V	
C334	1-163-005-11	CERAMIC CHIP	470PF	10%	50V	
C335	1-163-038-91	CERAMIC CHIP	0.1uF		25V	
C336	1-163-005-11	CERAMIC CHIP	470PF	10%	50V	
C337	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C338	1-164-005-11	CERAMIC CHIP	0.47uF		25V	
C339	1-163-011-11	CERAMIC CHIP	0.0015uF	10%	50V	
C340	1-163-035-00	CERAMIC CHIP	0.047uF		50V	
C341	1-163-117-00	CERAMIC CHIP	100PF	5%	50V	
C342	1-163-038-91	CERAMIC CHIP	0.1uF		25V	
C343	1-163-038-91	CERAMIC CHIP	0.1uF		25V	
C344	1-163-038-91	CERAMIC CHIP	0.1uF		25V	
C345	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V	
C346	1-128-834-11	ELECT	470uF	20%	10V	
C361	1-163-101-00	CERAMIC CHIP	22PF	5%	50V	
C362	1-163-101-00	CERAMIC CHIP	22PF	5%	50V	
C363	1-163-038-91	CERAMIC CHIP	0.1uF		25V	
C364	1-128-834-11	ELECT	470uF	20%	10V	
C365	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V	
C366	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V	
C367	1-164-346-11	CERAMIC CHIP	1uF		16V	
C368	1-128-834-11	ELECT	470uF	20%	10V	
C371	1-163-038-91	CERAMIC CHIP	0.1uF		25V	
C372	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V	
C381	1-126-964-11	ELECT	10uF	20%	50V	
C382	1-126-964-11	ELECT	10uF	20%	50V	
C383	1-163-011-11	CERAMIC CHIP	0.0015uF	10%	50V	

MAIN

Ref. No.	Part No.	Description	Remark			Ref. No.	Part No.	Description	Remark
C384	1-163-011-11	CERAMIC CHIP	0.0015uF	10%	50V	< CONNECTOR >			
C391	1-104-665-11	ELECT	100uF	20%	10V	CN301	1-770-168-11	CONNECTOR,FFC(LIF(NON-ZIF))16P	
C392	1-163-038-91	CERAMIC CHIP	0.1uF		25V	CN302	1-779-977-11	PIN, CONNECTOR 6P	
C401	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V	CN303	1-564-707-11	PIN, CONNECTOR (SMALL TYPE) 5P	
C402	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V	* CN351	1-568-955-11	PIN, CONNECTOR 6P	
C403	1-163-117-00	CERAMIC CHIP	100PF	5%	50V	CN401	1-774-289-11	PIN, CONNECTOR (PC BOARD) 15P	
C404	1-163-031-11	CERAMIC CHIP	0.01uF		50V				
					(EXCEPT US,CND)	* CN601	1-568-850-11	SOCKET, CONNECTOR 7P	
C405	1-163-031-11	CERAMIC CHIP	0.01uF		50V	* CN701	1-568-850-11	SOCKET, CONNECTOR 7P	
					(EXCEPT US,CND)	CN702	1-691-647-11	SOCKET, CONNECTOR 13P	
C406	1-126-933-11	ELECT	100uF	20%	16V	< DIODE >			
C407	1-104-665-11	ELECT	100uF	20%	10V	D139	8-719-056-72	DIODE UDZ-TE-17-2.4B	
					(US,CND)	D701	8-719-914-43	DIODE DAN202K-T-146	
C407	1-126-964-11	ELECT	10uF	20%	50V	D751	8-719-075-77	DIODE EC10DA40-TE12	
					(EXCEPT US,CND)	D752	8-719-075-77	DIODE EC10DA40-TE12	
C408	1-163-038-91	CERAMIC CHIP	0.1uF		25V	D753	8-719-988-61	DIODE 1SS355TE-17	
C409	1-163-038-91	CERAMIC CHIP	0.1uF		25V				
C451	1-164-346-11	CERAMIC CHIP	1uF		16V	D754	8-719-988-61	DIODE 1SS355TE-17	
					(EXCEPT US,CND)	< FERRITE BEAD >			
C452	1-163-031-11	CERAMIC CHIP	0.01uF		50V	FB331	1-500-245-11	FERRITE 0UH	
					(EXCEPT US,CND)	< IC >			
C453	1-163-006-11	CERAMIC CHIP	560PF	10%	50V	IC111	8-759-495-85	IC M62442FP-A	
					(EXCEPT US,CND)	IC301	8-752-085-51	IC CXA2568M-T6	
C455	1-163-031-11	CERAMIC CHIP	0.01uF		50V	IC302	8-759-549-28	IC BA5974FP-E2	
					(EXCEPT US,CND)	IC303	8-752-389-34	IC CXD2585Q	
C456	1-163-239-11	CERAMIC CHIP	33PF	5%	50V	IC304	8-759-569-28	IC PCM1710U-B/1K	
					(EXCEPT US,CND)	IC391	8-749-923-04	IC TOTX178A	
C457	1-163-239-11	CERAMIC CHIP	33PF	5%	50V	IC451	8-759-560-51	IC BU1924F (EXCEPT US,CND)	
C458	1-164-346-11	CERAMIC CHIP	1uF		16V	IC501	8-759-331-72	IC NJM4558E-D(TE2)	
					(EXCEPT US,CND)	IC701	8-759-643-70	IC uPD780306GF-024-3BA	
C501	1-126-960-11	ELECT	1uF	20%	50V	IC751	8-759-635-63	IC M51943BSL-TP	
C502	1-163-117-00	CERAMIC CHIP	100PF	5%	50V	< JACK >			
C503	1-163-001-11	CERAMIC CHIP	220PF	10%	50V	J101	1-695-188-31	JACK, PIN 4P (TAPE IN/OUT)	
C511	1-126-934-11	ELECT	220uF	20%	10V	J501	1-779-050-11	JACK (PHONES)	
C512	1-126-934-11	ELECT	220uF	20%	10V	< COIL >			
C551	1-126-960-11	ELECT	1uF	20%	50V	L391	1-410-322-11	INDUCTOR 3.3uH	
C552	1-163-117-00	CERAMIC CHIP	100PF	5%	50V	L401	1-410-393-11	INDUCTOR CHIP 100uH	
C553	1-163-001-11	CERAMIC CHIP	220PF	10%	50V	L402	1-410-393-11	INDUCTOR CHIP 100uH	
C701	1-163-231-11	CERAMIC CHIP	15PF	5%	50V	L403	1-410-393-11	INDUCTOR CHIP 100uH	
C702	1-163-231-11	CERAMIC CHIP	15PF	5%	50V	L404	1-410-393-11	INDUCTOR CHIP 100uH	
C703	1-163-038-91	CERAMIC CHIP	0.1uF		25V	L405	1-410-393-11	INDUCTOR CHIP 100uH	
C704	1-163-038-91	CERAMIC CHIP	0.1uF		25V	< LIQUID CRYSTAL DISPLAY >			
C705	1-163-038-91	CERAMIC CHIP	0.1uF		25V	LCD701	1-803-778-11	DISPLAY PANEL, LIQUID CRYSTAL	
C751	1-104-905-11	CAPACITOR	0.22F		5.5V	< TRANSISTOR >			
C754	1-126-786-11	ELECT	47uF	20%	16V	Q113	8-729-107-46	TRANSISTOR 2SC3624A-T1L15L16	
C755	1-163-038-91	CERAMIC CHIP	0.1uF		25V	Q131	8-729-027-23	TRANSISTOR DTA114EKA-T146	
C756	1-126-786-11	ELECT	47uF	20%	16V	Q163	8-729-107-46	TRANSISTOR 2SC3624A-T1L15L16	
C757	1-163-038-91	CERAMIC CHIP	0.1uF		25V	Q301	8-729-049-31	TRANSISTOR 2SB710-RTX	
C758	1-110-501-11	CERAMIC CHIP	0.33uF	10%	16V	Q401	8-729-120-28	TRANSISTOR 2SC3052EF-T1-LEF	
C759	1-163-031-11	CERAMIC CHIP	0.01uF		50V			(EXCEPT US,CND)	
C784	1-128-834-11	ELECT	470uF	20%	10V	Q501	8-729-107-46	TRANSISTOR 2SC3624A-T1L15L16	
C785	1-164-346-11	CERAMIC CHIP	1uF		16V				
C791	1-163-031-11	CERAMIC CHIP	0.01uF		50V				
C792	1-163-031-11	CERAMIC CHIP	0.01uF		50V				
C793	1-163-031-11	CERAMIC CHIP	0.01uF		50V				
C798	1-163-251-11	CERAMIC CHIP	100PF	5%	50V				
C799	1-163-251-11	CERAMIC CHIP	100PF	5%	50V				

Ref. No.	Part No.	Description	Remark			Ref. No.	Part No.	Description	Remark		
Q551	8-729-107-46	TRANSISTOR	2SC3624A-T1L15L16			R334	1-216-077-91	RES,CHIP	15K	5%	1/10W
Q751	8-729-120-28	TRANSISTOR	2SC3052EF-T1-LEF			R335	1-216-085-00	METAL CHIP	33K	5%	1/10W
Q771	8-729-900-53	TRANSISTOR	DTC114EKA-T146			R336	1-216-073-00	METAL CHIP	10K	5%	1/10W
Q772	8-729-600-22	TRANSISTOR	2SA1235TP-1EF			R337	1-216-097-91	RES,CHIP	100K	5%	1/10W
Q773	8-729-900-53	TRANSISTOR	DTC114EKA-T146			R338	1-216-073-00	METAL CHIP	10K	5%	1/10W
Q774	8-729-600-22	TRANSISTOR	2SA1235TP-1EF			R339	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
Q781	8-729-040-20	TRANSISTOR	RT1P137L-TP			R340	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
Q782	8-729-900-53	TRANSISTOR	DTC114EKA-T146			R341	1-216-121-91	RES,CHIP	1M	5%	1/10W
< RESISTOR >						R342	1-216-037-00	METAL CHIP	330	5%	1/10W
R101	1-216-049-91	RES,CHIP	1K	5%	1/10W	R343	1-216-037-00	METAL CHIP	330	5%	1/10W
R102	1-216-097-91	RES,CHIP	100K	5%	1/10W	R344	1-216-037-00	METAL CHIP	330	5%	1/10W
R103	1-216-049-91	RES,CHIP	1K	5%	1/10W	R345	1-216-037-00	METAL CHIP	330	5%	1/10W
R111	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	R346	1-216-077-91	RES,CHIP	15K	5%	1/10W
R112	1-216-073-00	METAL CHIP	10K	5%	1/10W	R347	1-216-049-91	RES,CHIP	1K	5%	1/10W
R113	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	R348	1-216-025-91	RES,CHIP	100	5%	1/10W
R114	1-216-097-91	RES,CHIP	100K	5%	1/10W	R349	1-216-097-91	RES,CHIP	100K	5%	1/10W
R115	1-216-073-00	METAL CHIP	10K	5%	1/10W	R361	1-216-037-00	METAL CHIP	330	5%	1/10W
R116	1-216-094-00	RES,CHIP	75K	5%	1/10W	R362	1-216-037-00	METAL CHIP	330	5%	1/10W
R117	1-216-085-00	METAL CHIP	33K	5%	1/10W	R363	1-216-037-00	METAL CHIP	330	5%	1/10W
R131	1-216-025-91	RES,CHIP	100	5%	1/10W	R364	1-216-025-91	RES,CHIP	100	5%	1/10W
R132	1-216-025-91	RES,CHIP	100	5%	1/10W	R365	1-216-025-91	RES,CHIP	100	5%	1/10W
R133	1-216-025-91	RES,CHIP	100	5%	1/10W	R381	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R134	1-216-097-91	RES,CHIP	100K	5%	1/10W	R382	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R135	1-216-049-91	RES,CHIP	1K	5%	1/10W	R383	1-216-073-00	METAL CHIP	10K	5%	1/10W
R139	1-216-057-00	METAL CHIP	2.2K	5%	1/10W (US,CND)	R384	1-216-073-00	METAL CHIP	10K	5%	1/10W
R151	1-216-049-91	RES,CHIP	1K	5%	1/10W	R401	1-216-025-91	RES,CHIP	100	5%	1/10W
R152	1-216-097-91	RES,CHIP	100K	5%	1/10W	R402	1-216-025-91	RES,CHIP	100	5%	1/10W
R153	1-216-049-91	RES,CHIP	1K	5%	1/10W	R403	1-216-025-91	RES,CHIP	100	5%	1/10W
R161	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	R404	1-216-025-91	RES,CHIP	100	5%	1/10W
R162	1-216-073-00	METAL CHIP	10K	5%	1/10W	R405	1-216-073-00	METAL CHIP	10K	5%	1/10W
R163	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	R406	1-216-073-00	METAL CHIP	10K	5%	1/10W
R164	1-216-097-91	RES,CHIP	100K	5%	1/10W	R407	1-216-049-91	RES,CHIP	1K	5%	1/10W
R165	1-216-073-00	METAL CHIP	10K	5%	1/10W	R408	1-216-073-00	METAL CHIP	10K	5%	1/10W (EXCEPT US,CND)
R166	1-216-094-00	RES,CHIP	75K	5%	1/10W	△ R409	1-212-881-11	FUSIBLE	100	5%	1/4W F (EXCEPT US,CND)
R167	1-216-085-00	METAL CHIP	33K	5%	1/10W	R411	1-216-049-91	RES,CHIP	1K	5%	1/10W
R301	1-216-295-91	SHORT	0			R412	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R302	1-216-295-91	SHORT	0			R413	1-216-049-91	RES,CHIP	1K	5%	1/10W
R303	1-216-295-91	SHORT	0			R414	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R304	1-216-295-91	SHORT	0			R452	1-216-129-00	METAL CHIP	2.2M	5%	1/10W (EXCEPT US,CND)
R305	1-216-103-00	METAL CHIP	180K	5%	1/10W	R453	1-216-049-91	RES,CHIP	1K	5%	1/10W (EXCEPT US,CND)
R306	1-216-103-00	METAL CHIP	180K	5%	1/10W	R454	1-216-033-00	METAL CHIP	220	5%	1/10W (EXCEPT US,CND)
R307	1-216-001-00	METAL CHIP	10	5%	1/10W	R455	1-216-033-00	METAL CHIP	220	5%	1/10W (EXCEPT US,CND)
R308	1-216-003-11	RES,CHIP	12	5%	1/10W	R501	1-216-097-91	RES,CHIP	100K	5%	1/10W
R310	1-216-089-91	RES,CHIP	47K	5%	1/10W	R502	1-216-073-00	METAL CHIP	10K	5%	1/10W
R311	1-216-081-00	METAL CHIP	22K	5%	1/10W	R503	1-216-089-91	RES,CHIP	47K	5%	1/10W
R312	1-216-121-91	RES,CHIP	1M	5%	1/10W	R504	1-216-025-91	RES,CHIP	100	5%	1/10W
R313	1-216-295-91	SHORT	0			R505	1-216-049-91	RES,CHIP	1K	5%	1/10W
R315	1-216-121-91	RES,CHIP	1M	5%	1/10W	R511	1-216-017-91	RES,CHIP	47	5%	1/10W
R321	1-216-308-00	METAL CHIP	4.7	5%	1/10W	R512	1-216-017-91	RES,CHIP	47	5%	1/10W
R322	1-216-101-00	METAL CHIP	150K	5%	1/10W	R551	1-216-097-91	RES,CHIP	100K	5%	1/10W
R323	1-216-089-91	RES,CHIP	47K	5%	1/10W	The components identified by mark △ or dotted line with mark △ are critical for safety. Replace only with part number specified. Les composants identifiés par une marque △ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.					
R324	1-216-111-00	METAL CHIP	390K	5%	1/10W						
R331	1-216-025-91	RES,CHIP	100	5%	1/10W						
R332	1-216-077-91	RES,CHIP	15K	5%	1/10W						
R333	1-216-097-91	RES,CHIP	100K	5%	1/10W						

Ref. No.	Part No.	Description			Remark
R552	1-216-073-00	METAL CHIP	10K	5%	1/10W
R553	1-216-089-91	RES,CHIP	47K	5%	1/10W
R554	1-216-025-91	RES,CHIP	100	5%	1/10W
R555	1-216-049-91	RES,CHIP	1K	5%	1/10W
R701	1-216-109-00	METAL CHIP	330K	5%	1/10W
R702	1-216-097-91	RES,CHIP	100K	5%	1/10W
R703	1-216-097-91	RES,CHIP	100K	5%	1/10W
R704	1-216-041-00	METAL CHIP	470	5%	1/10W
R704	1-216-081-00	METAL CHIP	22K	5%	(US,CND) 1/10W (EXCEPT US,CND)
R705	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R706	1-216-073-00	METAL CHIP	10K	5%	1/10W
R707	1-216-073-00	METAL CHIP	10K	5%	1/10W
R708	1-216-073-00	METAL CHIP	10K	5%	1/10W
R709	1-216-073-00	METAL CHIP	10K	5%	1/10W
R710	1-216-065-91	RES,CHIP	4.7K	5%	1/10W
R751	1-216-025-91	RES,CHIP	100	5%	1/10W
R752	1-216-049-91	RES,CHIP	1K	5%	1/10W
R753	1-216-065-91	RES,CHIP	4.7K	5%	1/10W
R754	1-216-089-91	RES,CHIP	47K	5%	1/10W
R755	1-216-089-91	RES,CHIP	47K	5%	1/10W
R756	1-216-073-00	METAL CHIP	10K	5%	1/10W
R757	1-216-065-91	RES,CHIP	4.7K	5%	1/10W
R771	1-216-073-00	METAL CHIP	10K	5%	1/10W
R772	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R773	1-216-037-00	METAL CHIP	330	5%	1/10W
R774	1-216-073-00	METAL CHIP	10K	5%	1/10W
R775	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R776	1-216-073-00	METAL CHIP	10K	5%	1/10W
R777	1-216-057-00	METAL CHIP	2.2K	5%	1/10W (US,CND)
R778	1-216-037-00	METAL CHIP	330	5%	1/10W
R785	1-216-049-91	RES,CHIP	1K	5%	1/10W
R792	1-216-097-91	RES,CHIP	100K	5%	1/10W
R793	1-216-097-91	RES,CHIP	100K	5%	1/10W
R794	1-216-097-91	RES,CHIP	100K	5%	1/10W
< VIBRATOR >					
X361	1-579-280-11	VIBRATOR, CRYSTAL (16.9344MHz)			
X601	1-579-900-21	VIBRATOR, CRYSTAL (4.332MHz)			
(EXCEPT US,CND)					
X701	1-579-233-11	VIBRATOR, CERAMIC (5MHz)			
X702	1-567-098-41	VIBRATOR, CRYSTAL (32kHz)			

A-4426-743-A		PANEL BOARD, COMPLETE			

< CAPACITOR >					
C604	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C605	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C612	1-124-589-11	ELECT	47uF	20%	16V
C613	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C650	1-163-101-00	CERAMIC CHIP	22PF	5%	50V
C652	1-163-017-00	CERAMIC CHIP	0.0047uF	5%	50V
C653	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C654	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C655	1-124-589-11	ELECT	47uF	20%	16V

Ref. No.	Part No.	Description	Remark		
< DIODE >					
D604	8-719-069-45	DIODE SELU5E23C-TP15			
D605	8-719-069-45	DIODE SELU5E23C-TP15			
D650	8-719-069-56	DIODE UDZS-TE17-6.2B			
D651	8-719-069-56	DIODE UDZS-TE17-6.2B			
< IC >					
IC601	8-742-129-00	HYB IC SBX1971-51			
IC651	8-759-925-80	IC SN74HC14ANS-E05			
IC652	8-759-925-90	IC SN74HC74ANS-E05			
< TRANSISTOR >					
Q651	8-729-900-53	TRANSISTOR	DTC114EKA-T146		
< RESISTOR >					
R601	1-216-041-00	METAL CHIP	470	5%	1/10W
R602	1-216-045-00	METAL CHIP	680	5%	1/10W
R603	1-216-049-91	RES,CHIP	1K	5%	1/10W
R606	1-216-017-91	RES,CHIP	47	5%	1/10W
R607	1-216-037-00	METAL CHIP	330	5%	1/10W
R608	1-216-037-00	METAL CHIP	330	5%	1/10W
R609	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R611	1-216-041-00	METAL CHIP	470	5%	1/10W
R612	1-216-045-00	METAL CHIP	680	5%	1/10W
R613	1-216-049-91	RES,CHIP	1K	5%	1/10W
R614	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R615	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R616	1-216-065-91	RES,CHIP	4.7K	5%	1/10W
R619	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R650	1-216-689-11	METAL CHIP	39K	0.5%	1/10W
R651	1-216-091-00	METAL CHIP	56K	5%	1/10W
R652	1-216-025-91	RES,CHIP	100	5%	1/10W
R653	1-216-073-00	METAL CHIP	10K	5%	1/10W
R656	1-216-097-91	RES,CHIP	100K	5%	1/10W
< SWITCH >					
S601	1-762-196-21	SWITCH, TACT (I/⏏)			
S602	1-762-196-21	SWITCH, TACT (DISPLAY)			
S603	1-762-196-21	SWITCH, TACT (SOUND MENU)			
S604	1-762-196-21	SWITCH, TACT (TUNER/BAND)			
S611	1-762-196-21	SWITCH, TACT (▶▶II)			
S612	1-762-196-21	SWITCH, TACT (■)			
S613	1-762-196-21	SWITCH, TACT (◀◀I)			
S614	1-762-196-21	SWITCH, TACT (▶▶I)			
S615	1-762-196-21	SWITCH, TACT (– (VOL))			
S616	1-762-196-21	SWITCH, TACT (+ (VOL))			

Ref. No.	Part No.	Description	Remark				Ref. No.	Part No.	Description	Remark			
	A-4426-744-A	POWER BOARD, COMPLETE (US,CND) *****					D901	8-719-043-52	DIODE F5KQ60				
							D911	8-719-043-52	DIODE F5KQ60				
	A-4426-753-A	POWER BOARD, COMPLETE (EXCEPT US,CND) *****					D931	8-719-210-21	DIODE 11EQS04-NTA2B				
							D941	8-719-210-21	DIODE 11EQS04-NTA2B				
	1-533-293-11	FUSE HOLDER					< GROUND TERMINAL >						
		< CAPACITOR >					EPT1	1-537-770-21	TERMINAL BOARD, GROUND				
							EPT2	1-537-770-21	TERMINAL BOARD, GROUND (US,CND)				
							EPT901	1-537-770-21	TERMINAL BOARD, GROUND				
C1	1-107-956-11	ELECT	220uF	20%	200V	(US,CND)	< FUSE >						
C1	1-131-714-11	ELECT	100uF	20%	400V	(EXCEPT US,CND)	△F1	1-532-465-31	FUSE (T3.15AL/250V)(EXCEPT US,CND)				
C2	1-107-888-11	ELECT	47uF	20%	25V		△F1	1-533-690-11	FUSE GLASS (3.15AL/125V)(US,CND)				
C3	1-130-477-00	MYLAR	0.0033uF	5%	50V		< FERRITE BEAD >						
C4	1-107-429-11	CERAMIC	0.0022uF	10%	1KV		FB1	1-412-473-21	INDUCTOR	0UH			
C5	1-162-290-31	CERAMIC	470PF	10%	50V		< IC >						
C6	1-131-983-11	FILM	0.1uF		275V		IC1	8-749-016-64	IC STR-F6674-LF1352				
C7	1-131-983-11	FILM	0.1uF		275V		IC933	8-759-288-53	IC LA5617				
C9	1-113-907-51	CERAMIC	0.0022uF	99%	250V		IC951	8-749-016-65	IC SE015N				
C10	1-131-984-51	CERAMIC	330PF		2KV		< COIL >						
C11	1-113-920-11	CERAMIC	0.0022uF	20%	250V		L1	1-419-341-11	COIL, COMMON MODE CHOKE				
C12	1-113-920-11	CERAMIC	0.0022uF	20%	250V		L901	1-419-281-11	INDUCTOR	10uH			
C13	1-131-714-11	ELECT	100uF	20%	400V	(EXCEPT US,CND)	L911	1-419-281-11	INDUCTOR	10uH			
C14	1-113-920-11	CERAMIC	0.0022uF	20%	250V		< ISOLATER >						
C21	1-164-159-21	CERAMIC	0.1uF		50V		PC1	8-749-013-68	IC PS2561-1-D				
C901	1-107-425-11	CERAMIC	470PF	10%	1KV		PC2	8-749-013-68	IC PS2561-1-D				
C902	1-131-969-31	ELECT	1800uF		25V		< TRANSISTOR >						
C903	1-131-970-31	ELECT	1500uF		25V		Q21	8-729-111-29	TRANSISTOR	2SD1616-TP-LK			
C911	1-107-425-11	CERAMIC	470PF	10%	1KV		Q22	8-729-118-00	TRANSISTOR	2SB1116-TP-LK			
C912	1-131-969-31	ELECT	1800uF		25V		Q23	8-729-119-76	TRANSISTOR	2SA1115TP-EF			
C913	1-131-970-31	ELECT	1500uF		25V		Q951	8-729-620-05	TRANSISTOR	2SC2603TP-EF			
C931	1-107-425-11	CERAMIC	470PF	10%	1KV		< RESISTOR >						
C932	1-126-768-11	ELECT	2200uF	20%	16V		△R1	1-202-725-00	SOLID	3.3M	10%	1/2W	(US,CND)
C939	1-124-995-11	ELECT	220uF	20%	10V		R2	1-249-426-11	CARBON	5.6K	5%	1/4W	
C941	1-107-425-11	CERAMIC	470PF	10%	1KV		R3	1-249-421-11	CARBON	2.2K	5%	1/4W	F
C942	1-126-012-11	ELECT	470uF	20%	16V		R4	1-249-415-11	CARBON	680	5%	1/4W	F
C949	1-124-995-11	ELECT	220uF	20%	10V		△R5	1-217-151-00	METAL	0.22	10%	2W	
C951	1-136-153-00	FILM	0.01uF	5%	50V		R8	1-249-393-11	CARBON	10	5%	1/4W	F
C952	1-162-292-31	CERAMIC	680PF	10%	50V		△R9	1-215-903-11	METAL OXIDE	68K	5%	2W	F
< CONNECTOR >							R10	1-247-895-91	CARBON	470K	5%	1/4W	
* CN1	1-580-230-11	PIN, CONNECTOR (PC BOARD) 2P					R11	1-247-863-91	CARBON	22K	5%	1/4W	
CN903	1-764-334-11	PLUG, CONNECTOR 11P					R21	1-249-425-11	CARBON	4.7K	5%	1/4W	F
< DIODE >							R22	1-249-424-11	CARBON	3.9K	5%	1/4W	F
D2	8-719-200-93	DIODE 11EQS10-TA2					R23	1-247-881-00	CARBON	120K	5%	1/4W	
D3	8-719-200-93	DIODE 11EQS10-TA2					R24	1-249-439-11	CARBON	68K	5%	1/4W	
D4	8-719-210-21	DIODE 11EQS04-NTA2B					△R939	1-219-119-81	FUSIBLE	0.1	5%	1/4W	F
D6	8-719-109-97	DIODE MTZJ-T-77-6.8B					△R949	1-219-119-81	FUSIBLE	0.1	5%	1/4W	F
D7	8-719-911-19	DIODE 1SS133T-72					R951	1-249-419-11	CARBON	1.5K	5%	1/4W	F
D10	8-719-077-64	DIODE 11E4N-TA1B2					R952	1-249-401-11	CARBON	47	5%	1/4W	F
D11	8-719-077-64	DIODE 11E4N-TA1B2											
D12	8-719-077-64	DIODE 11E4N-TA1B2											
D13	8-719-077-64	DIODE 11E4N-TA1B2											
D21	8-719-048-55	DIODE MTZJ-T-77-10C											
D22	8-719-110-53	DIODE MTZJ-T-77-20C											

HCD-EX1

POWER

REG

SW

Ref. No.	Part No.	Description	Remark		
R953	1-249-420-11	CARBON	1.8K	5%	1/4W F
R954	1-249-437-11	CARBON	47K	5%	1/4W
R955	1-249-425-11	CARBON	4.7K	5%	1/4W F
R956	1-249-415-11	CARBON	680	5%	1/4W F
< TRANSFORMER >					
△ T901	1-435-130-11	TRANSFORMER, POWER			
< THERMISTOR >					
△ TH1	1-803-806-31	THERMISTOR, NTC			

	1-675-407-11	REG BOARD			

< CAPACITOR >					
C933	1-164-346-11	CERAMIC CHIP	1uF		16V
C934	1-126-926-11	ELECT	1000uF	20%	10V
C935	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C936	1-126-964-11	ELECT	10uF	20%	50V
C937	1-126-926-11	ELECT	1000uF	20%	10V
C961	1-126-967-11	ELECT	47uF	20%	50V
C962	1-164-159-21	CERAMIC	0.1uF		50V
C963	1-136-153-00	FILM	0.01uF	5%	50V
< CONNECTOR >					
* CN901	1-568-832-11	SOCKET, CONNECTOR 13P			
< DIODE >					
D933	8-719-988-61	DIODE 1SS355TE-17			
D934	8-719-200-82	DIODE 11ES2-TA2B			
D961	8-719-986-26	DIODE HZS12A3LTA			
< IC >					
IC931	8-759-460-76	IC BA07FP-E2			
IC932	8-759-231-53	IC M5F7805L			
< TRANSISTOR >					
Q961	8-729-026-68	TRANSISTOR	2SD2525(TP)		
Q962	8-729-202-67	TRANSISTOR	2SK246GR3-TPE2		
Q964	8-729-120-28	TRANSISTOR	2SC3052EF-T1-LEF		
< RESISTOR >					
R961	1-216-073-00	METAL CHIP	10K	5%	1/10W
R962	1-216-049-91	RES,CHIP	1K	5%	1/10W
< TERMINAL >					
TM801	1-537-238-11	TERMINAL BOARD			

Ref. No.	Part No.	Description	Remark
	1-674-909-11	SW BOARD	*****
< SWITCH >			
S351	1-571-300-21	SWITCH, ROTARY	*****

MISCELLANEOUS			

9	1-769-889-11	WIRE(FLAT TYPE) (7 CORE)	
△ 60	1-575-651-21	CORD,POWER (AEP,UK)	
△ 60	1-783-531-31	CORD,POWER (US,CND)	
62	1-791-698-11	WIRE (FLAT TYPE) (16 CORE)	
63	1-769-973-11	WIRE (FLAT TYPE) (13 CORE)	
64	1-693-407-13	TUNER (US,CND)	
64	1-693-408-12	TUNER (EXCEPT US,CND)	
△ 65	1-770-019-11	ADAPTOR, CONVERSION PLUG 3P (UK)	
△ 153	8-820-087-11	OPTICAL PICK-UP KSS-770A/S-N1	
155	1-763-381-11	MOTOR, DC	
158	1-960-065-11	HARNESS	
160	1-791-698-11	WIRE (FLAT TYPE) (16 CORE)	

HARDWARE LIST			

#1	7-685-870-01	SCREW +BVTT 3X5 (S)	
#2	7-685-246-14	SCREW +KTP 3X8 TYPE2 NON-SLIT	
#3	7-685-646-79	SCREW +BVTP 3X8 TYPE2 N-S	
#4	7-621-775-08	SCREW +B 2.6X3	
#5	7-685-534-14	SCREW +BTP 2.6X8 TYPE2 N-S	
#6	7-685-132-19	SCREW +P 2.6X5 TYPE2 NON-SLIT	
#7	7-624-105-04	STOP RING 2.3, TYPE -E	

The components identified by mark △ or dotted line with mark △ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque △ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.
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SS-CEX1

SERVICE MANUAL

Ver 1.1 2002.03



*US Model
Canadian Model
AEP Model
UK Model
E Model
Australian Model
Tourist Model*

This set is the speaker system in CMT-EX1.

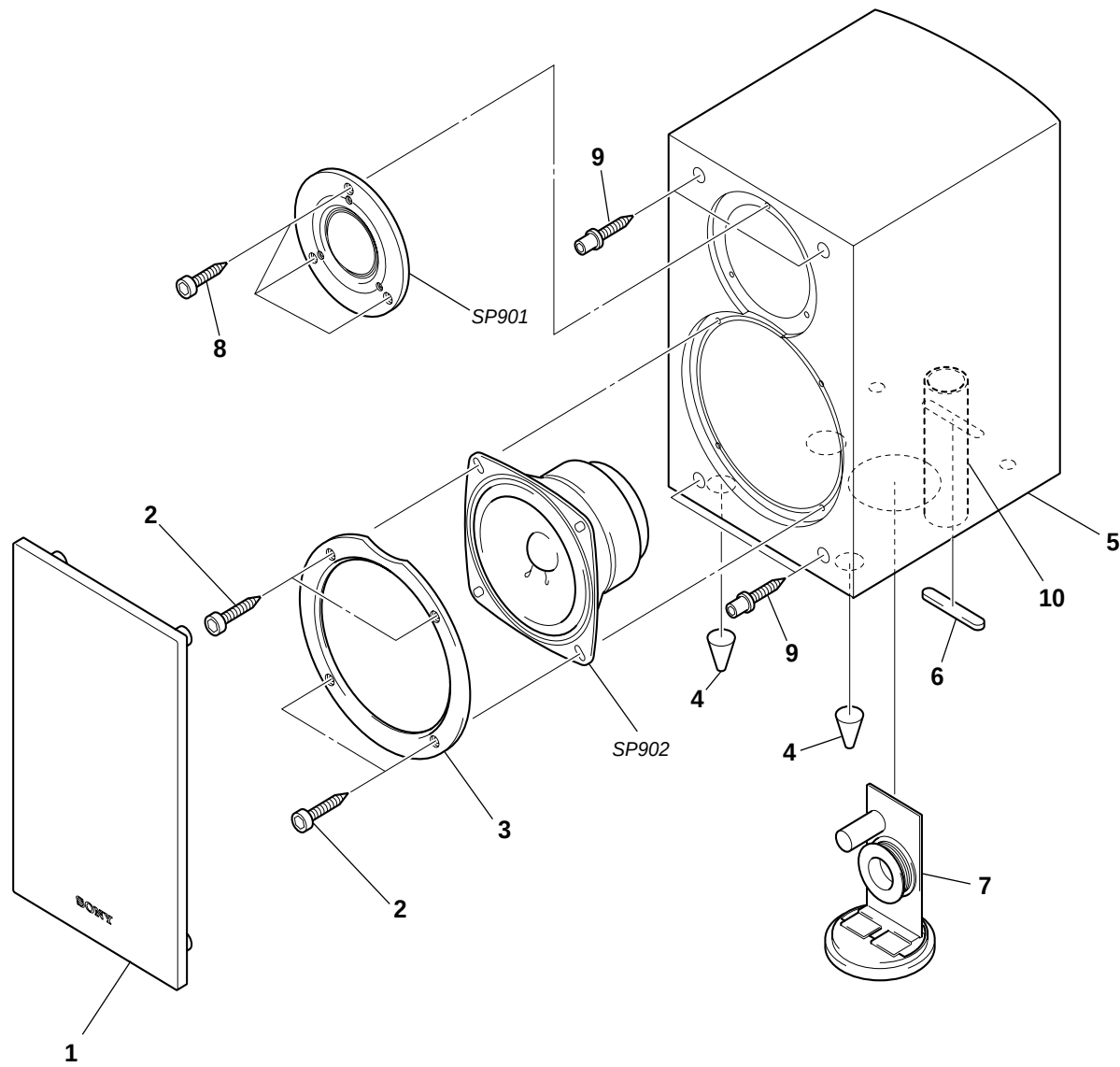
SPECIFICATIONS

Speaker system	2-way, bass-reflex type
Speaker units	
Woofer :	9 cm (3 ⁵ / ₈ in) dia., glass-fiber cone type
Tweeter :	2 cm (3 ¹³ / ₁₆ in) dia., balanced drive
impedance	4 ohms
Dimensions	130 x 216 x 183 mm (5 ¹ / ₈ x 8 ⁵ / ₈ x 7 ¹ / ₄ in) (w / h / d incl. projecting parts and controls)
Mass	Approx 1.8 kg (3 lb 15oz.) net per speaker

SPEAKER SYSTEM

EXPLODED VIEW AND PARTS LIST

- NOTE:
- Items marked “*” are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
 - Hardware (# mark) list and accessories and packing materials are given in the last of this parts list.



Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
1	4-225-980-01	FRAME		8	4-225-977-01	WOOD SCREW	
2	4-225-978-01	WOOD SCREW		9	4-225-979-01	PIN	
3	4-225-985-01	RING		10	4-225-984-01	PAPER TUBE	
4	4-225-981-01	FOOT A		SP901	1-529-523-11	SPEAKER (2 cm) (Tweeter)	
5	4-225-982-01	SPK BOX		SP902	1-529-564-11	SPEAKER (9 cm) (Woofer)	
6	4-223-414-01	FOOT(FELT)					
7	1-761-307-11	MOUNT BOARD					

MEMO